

PHILADELPHIA MEDICAL TIMES.

PHILADELPHIA, JUNE 28, 1884.

ORIGINAL LECTURES.

INFLAMMATION OF THE IRIS, AND ITS TREATMENT.

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*A paper read before the Kentucky State Medical Society
at Bowling Green, June 4, 1884.*

IN order that the morbid conditions of any structure, organ, or tissue of the body may be well understood, it is necessary, first, to consider the elementary constituents of the part and its normal functions.

The iris is a complex and peculiar organ: its structure, though resembling in appearance and directly continuous from the ciliary body with the choroid, is different in several essential particulars. The iris is made up of a net-work of elastic tissue, capillary blood-vessels, and a large amount of pigment held loosely together by connective-tissue fibre. The pupillary opening of the iris is surrounded by a circular muscle, into the sheath of which are projected the filamentous extremities of those slips of homogeneous hyaline connective-tissue fibre from the division of the posterior elastic layer of the cornea through what is called the pectinate ligament of the iris. The iris then is attached at its periphery, by means of the pectinate ligament, to the cornea. The radiary fibres of the iris are in no sense muscular: they are of the structureless, hyaline, connective-tissue type, and are the direct continuations of the filaments of the pectinate ligament. The only muscular fibres of the iris are those contained within the sheath of the constrictor pupillæ muscle. The posterior surface of the iris is a delicate moss-like surface, made up of fine connective tissue, holding loosely an abundant supply of pigment, always found in this portion.

When the iris is inflamed, its blood-vessels offer mechanical resistance to dilatation of the pupil: this secures more firm contact between the posterior surface of the iris and the anterior surface of the capsule which contains the crystalline lens. Adhesions, therefore, usually occur

early in the course of an iritis. The absence of arteries and of veins always limits the extent and modifies the character of disorganization of the iris. An inflammation of the iris has its chief dangers either in the formation of abnormal adhesions with the lens-capsule, or, what very much more rarely happens, the extension of the process to the ciliary body, and, finally, to the choroid. The vascular connection between the choroid and the ciliary body is limited to a very small number of arterial twigs, whilst the vascular connection between the iris and the ciliary body is limited to those venules which carry blood from both of these structures, or, more properly speaking, from the whole of the iris and a part of the projecting portion of the ciliary body, into the venous sinus called the canal of Schlemm.

When embolism takes place in this canal, the eye rapidly undergoes shrinkage, and it is, from the moment of its occurrence, fatal to the existence of vision.

Iritis is very much more likely to follow inflammation of the ciliary body than inflammation of the ciliary body is likely to follow iritis. The position of the iris renders it more liable to mechanical injuries. The enormous extent of surface to be supplied by capillary vessels alone necessarily renders the circulation of blood in this structure somewhat sluggish, and it is, therefore, a favorite site for the development of syphilitic gumma.

It is an unfortunate error in the medical profession to attribute all forms of iritis, not due to traumatism, to syphilis. Iritis when *not* characterized by the presence of nodular elevations upon the surface, circumscribed infiltrations of the stroma, or projecting bodies upon the pupillary margin, is not distinctively syphilitic: these forms alone are characteristic and typical; they denote constitutional syphilis as certainly as any other local manifestation of that disease.

In the so-called malarial diseases, micrococci have been found clogging the capillaries of the iris, causing suppurative inflammation, which, extending to the ciliary body and to the choroid, develop a panophthalmitis, making it necessary to enucleate the eye to protect its fellow from the ravages of the so-called sympathetic ophthalmia.

Rheumatic disease is sometimes said to

be the cause of iritis. In my own experience, however, the iritis of rheumatism is a secondary phenomenon, depending upon a pre-existing inflammation of the ciliary muscle.

Tuberculosis of the ciliary body and the choroid is a common affection: it is always, of course, of that type called the miliary tubercle, and in rare instances it is seen in the iris. A limited number of cases of miliary tubercle of the iris recover.

I have seen two cases of the so-called sebaceous cysts of the iris. There is no glandular organ in communication with the iris which might furnish a veritable sebaceous secretion, but the degeneration which takes place in the lymph-cells of tubercular disease yields a product of a very closely analogous character. Graefe is responsible for the term sebaceous cyst of the iris: his case, published in his *Archives*, a case reported by Dr. George Strawbridge, of Philadelphia, to the Ophthalmological Section of the International Congress of 1876, and a case occurring in my own practice, which I published in the *Philadelphia Medical and Surgical Reporter* of April 4, 1874, are the only recorded cases I can now remember.

Cystic tumors are especially liable to follow penetrating wounds, as was pointed out by Mr. Bowman. According to Mr. Hulke, cystic tumors of the iris are generally filled with fluid contents.

Removal of the tumor in the case above referred to was done by me on January 23, 1874. The patient recovered so far as to be able to return home on the 27th. On February 14 he wrote, "My eye is getting along very well: it has not much inflammation, and I can see to count fingers across the room." At that time I entertained but little doubt of the ultimate recovery of the eye. In the month of April, however, the young man exposed himself to a heavy rain at a time when he had been ploughing and exerting himself. He was seized with bronchitis, and, two days later, with acute iritis. The margins of the pupil became quickly adherent to the lens-capsule; the pain was intense, yet it was two or three days after the iritis set in before the foolish man sought medical advice. The iris was then extensively attached posteriorly to the lens-capsule, and a considerable exudation of lymph had poured out, which effectually

sealed up the opening between the two chambers. A rapid secretion of aqueous humor in the posterior chamber, pressing hard against the infiltrated iris, forced it finally into contact with the cornea, and, following this, rupture of the capsular ligament of the lens, and detachment of the retina. Of course the eye had to be enucleated.

This is a sad history, and I relate it as a warning to medical practitioners to lose no time, in all forms of inflammation of the iris, in applying promptly some efficient mydriatic.

I have not mentioned any of the pathological peculiarities of traumatic iritis, because it differs in no material respect from traumatic inflammation in other parts of the body. The one great principle, however, to be observed in the treatment of all forms of iritis is to secure early and full dilatation of the pupil, and to maintain this state throughout the whole course of the inflammation, and upon the degree of intensity of the inflammatory action will the frequency of application of the mydriatic, as well as the strength of the solution, depend.

The sulphate of atropine has long been regarded as the most available and at the same time the best agent for the production of a prompt dilatation of the pupil, and, at the same time, the suspension of accommodation, which is necessary to put the eye in a state of entire rest. Experience, however, has shown that it frequently happens that when atropine solution has been instilled into the eye, a violent inflammation of the conjunctiva, and sometimes of the cornea, attended by œdema of the lids, has been brought on. More frequently still, the use of atropine greatly augments the tension of the eyeball, and in this way endangers its safety. For these reasons, I am convinced that the sulphate of atropine will finally disappear from the list of ophthalmic medicines.

That prodigy in science, Merck of Darmstadt, to whom the world is indebted for many grand discoveries, has at last succeeded in producing by synthesis an agent which, though it resembles atropia in its therapeutical and physiological action upon the iris, is not attended by any of the dangers which have been enumerated as objections to the sulphate of atropine. Although the momentary local effect is sometimes slightly irritating, it is

more promptly and powerfully efficient in dilating the pupil and suspending the accommodation of the eye, and it is more prompt in relieving the pain of ciliary neuralgia. The only objection that can be urged against its universal use is the increased cost of this drug as compared to others which have similar effects. It has now come into universal use with ophthalmic surgeons for suspending the accommodation in order to test the refraction of the eye. I have gradually come to rely upon the anodyne properties of this drug, because, in my experience, its soothing effect is more persistent than that of atropine, whilst the therapeutical indications are the same.

The hydrobromate of homatropine is now retailed at about seventy-five cents a grain, which is to be dissolved in one drachm of water. A single drop of this solution is sufficient for one application. It may be applied in severe cases of pain from acute iritis every five minutes until the pain ceases or is abated, and that for an indefinite time without producing any constitutional disturbance whatever. Patients complain of the presence of an unusually disagreeable and bitter taste, with a sense of warmth in the pharynx, after the second or third application. These are all the disagreeable effects I have ever noticed from its use.

In the healthy eye, the effects upon the pupil disappear in from twenty-four to thirty hours; whilst the effects of the sulphate of atropine persist from eight to fourteen days. Donders found that one grain of sulphate of atropine dissolved in a pint of water would, on the instillation of a single drop of the solution, disturb the accommodation of the eye for fourteen days.

Now, it must not be forgotten that no other local treatment is ever necessary in any case of iritis, so far as the function of the iris is concerned, than the frequent use of a solution of either the hydrobromate of homatropine, which is the best of all mydriatics, or the sulphate of atropine, the sulphate of duboisine, or the sulphate of daturine.

Now, as to the constitutional treatment. Viewing the inflammation in the iris in the same light as a similar character of localized inflammation in any other part of the body, the general practitioner of medicine will have little difficulty in de-

termining upon the proper course to pursue. In all the malarial cases periodicity will be observed in the occurrence of the pain coincidently with exacerbations of fever. Constitutional treatment in such cases as this should be that which is suggested by the pathological type and character of the malady. Syphilitic iritis always yields to the iodide of potassium or the iodide of sodium administered in progressively increasing doses, to be given in solution and diluted by a full glass of water. The rheumatic forms may yield to the iodides, alone or alternated with salicylate of soda.

In the tubercular form, where the disease is located in the iris, iridectomy including the affected part should be promptly done, and the treatment generally regulated according to the constitutional condition of the patient. In the traumatic forms, such treatment as the wounds of other structures may demand will readily suggest itself to the intelligent practitioner.

Burns, whether from chemical agents or hot substances, should not be treated with the eye closed, because of the danger of the formation of adhesions between the apposed raw surfaces of the eyeball and the lid.

Following these general rules faithfully and persistently, the practitioner will almost uniformly have the satisfaction of being able to save the eye, which would surely be lost either by a few hours of neglect, or, as is too often the case, acting under a misapprehension of the pathology or of the therapeutical indications, by the application of some stimulating astringent collyrium.

Another form of iritis which may seldom be seen by the general practitioner occurs from prolonged strain of the accommodation in the eyes of hypermetropes. This form requires no constitutional treatment, but local mydriasis must be maintained until all irritation ceases before any attempt at correcting the refraction.

THE *American Journal of Ophthalmology*, edited by Dr. Adolph Alt, of St. Louis, with associate editors in the principal medical centres, is a new monthly journal on this subject, of decided value. Judging from the first two numbers, it will contribute materially to this branch of medical science in this country.

ORIGINAL COMMUNICATIONS.

REPORT ON MEDICAL CHEMISTRY.

BY WILLIAM H. GREENE, M.D.

CHEMISTRY OF THE URINE.

GLUCOSE.—Emil Nylander recommends the following formula for a bismuth solution for the detection of glucose: Two grammes of bismuth subnitrate and four grammes of sodio-potassium tartrate are dissolved in one hundred grammes of a sodium hydrate solution containing eight per cent. of sodium oxide (sodium hydrate, thirteen grammes; water, ninety-seven grammes). By the addition of one part of this liquid to ten parts of urine, the presence of 0.05 per cent. of glucose may be detected, while urine free from glucose gives no result. The presence of albumen causes a red-brown precipitate which can scarcely be a source of error, but a large quantity of albumen interferes with the test. The proportions of urine and test-solution must be rigidly adhered to, as too much of the alkaline liquid precipitates the phosphates with a brown color.

On the estimation of glucose by Fehling's solution, F. Meyer has made an observation which may be serviceable in the analysis of urine. Towards the end of the reaction the cuprous oxide will deposit much more rapidly if a drop of zinc chloride solution be added to the boiling liquid, for the zinc hydrate formed settles quickly, and carries with it the cuprous oxide mechanically.

THE PROPORTION OF CHLORIDES in urine may, according to Wladimir Michailow, be determined directly by Mohr's volumetric method, after filtering the urine through animal charcoal. The uric acid and pigment will be retained, while the sodium chloride passes through without loss.

The same authority recommends Mohr's method for the separation of *animal pigments* by saturating their solutions with ammonium sulphate, as specially adapted for the precipitation of the coloring-matter of blood-serum and the urobilin of urine. He states, however, that the urobilin is not entirely precipitated from urine by the reagent, as an additional quantity can be obtained from the liquid by agitation with acetic ether. Solutions of urobilin in ammoniacal alcohol or acetic ether become oxidized on exposure to the air,

with formation of biliverdin, although the same oxidation cannot always be produced by treatment with potassium chromate or manganese dioxide and hydrochloric acid.

β -CROTONIC ACID has been detected in the urine in diabetes mellitus by E. Stadelmann, who has investigated the elimination of ammonia and the cause of diabetic coma. The presence of ammonia in large quantities—amounting to from three to eight, and in one case twelve, grammes per day—in seven cases of diabetes, and the excess of ammonia over the quantity of known acids, as shown by analysis, although the urine had an acid reaction, led to the research for a new acid. The evaporated urine was extracted with alcohol, the alcoholic solution evaporated, mixed with dilute sulphuric acid, and agitated with ether. After evaporation of the ethereal extract, the residue was distilled with water, of which the steam carried over an acid that formed well-crystallized barium and zinc salts. The free acid is uncrystallizable, and soluble in all proportions of water. Analysis of the zinc salt gave the figures required by crotonic acid, and all the properties of the acid and its salts indicate it to be β -crotonic acid.

Stadelmann considers the presence of large quantities of this acid in the system—from six to eight grammes per day were found in severe cases—as the cause of diabetic coma, and recommends as a remedy the subcutaneous injection of a two or three per cent. solution of sodium carbonate (the acid carbonate is probably intended).

FOR THE ESTIMATION OF IODINE IN URINE, Harnack recommends that the urine should be evaporated and incinerated with an excess of sodium hydrate, the carbonaceous ash exhausted with hot water, and the residue, together with the filter, again treated with sodium hydrate and burned; the mixed solution is then acidulated with hydrochloric acid, and treated with an excess of palladium chloride and allowed to stand twenty-four hours. The precipitate is collected on a tared filter, washed with hot water, dried at 100° , and weighed. This analysis gives the entire quantity of iodine present. For the estimation of potassium iodide, he treats the urine, slightly acidulated with hydrochloric acid, with palladium chloride, and fuses with soda the precipitate formed after standing a day or two. The aqueous solution of

the ash is again acidulated with hydrochloric acid, precipitated by palladium chloride, and the precipitate collected, washed, dried, and weighed.

DIGESTIVE FUNCTIONS OF BILE-ACIDS.

The probable digestive functions of the biliary acids, and their antiseptic properties, have been newly investigated by Richard Maly and Fr. Emich. When a solution of *taurocholic acid* is added to the solution of a peptone, the liquid becomes milky and an abundant white precipitate is formed; this cannot be separated by filtration, and deposits very slowly: under the microscope it appears to consist of small globules. It dissolves with such facility in alkaline liquids that the serum of blood at once causes it to disappear; but it is reprecipitated by hydrochloric or acetic acid. The original precipitate is entirely soluble in alcohol, and with cupric sulphate and potassium hydrate gives only a faint rose color. The authors consider that it is *taurocholic acid* and a little peptone, for the greater part of the latter remains in the supernatant liquid. Common salt as well as protopeptone solutions also precipitate *taurocholic acid*. On the contrary, albumen and albumen-syntonin give an entirely different reaction with this bile-acid: a flocculent precipitate is formed, soluble in alkaline liquids, but insoluble in alcohol; this precipitate contains *taurocholic acid* and *all* of the albumen present. This reaction makes *taurocholic acid* a valuable reagent for the quantitative separation of albuminoid substances from peptones and proto-peptones.

A saturated aqueous solution of *glycocholic acid*, which contains only .03 per cent. of the acid, is not clouded either by peptone or by protopeptone. If to a more concentrated solution of sodium glycocholate a peptone and then an acid be added, a crystalline or amorphous precipitate of *glycocholic acid* is formed, while all the peptone remains in solution. Albumen is very imperfectly precipitated by the addition of sodium glycocholate and acid.

A mixture of the two biliary acids of man behaves with peptone, protopeptone, and albumen just as does *taurocholic acid*.

These results indicate that in the duodenum, where the bile mixes with the chyme, and where the reaction is at first acid, neither syntonin nor albumen can exist in solution, but the peptones remain

dissolved. This temporary precipitation of the albuminoid matters which are subsequently subjected to the action of the pancreatic juice probably facilitates the absorption of the peptones.

All observers are in accord that the biliary acids are capable of arresting fermentation; and Emich's investigations have only aimed at determining the special functions of the separate acids in this respect. 0.2 to 0.5 per cent. of *taurocholic acid* is sufficient to prevent the putrefaction of an infusion of flesh or of pancreas, as well as the alcoholic and lactic fermentations. The latter change is the most readily influenced, being at once arrested by 0.25 per cent., and retarded by 0.1 per cent. *Glycocholic acid* is less active, even in much larger quantities, failing to arrest completely the fermentation changes: 2 per cent. does not completely prevent the putrefaction of a pancreatic liquid nor the lactic fermentation, and has no sensible effect on the alcoholic fermentation.

The hydration of albuminoid matters is affected in the same manner by these acids: 0.2 per cent. of *taurocholic acid* is sufficient to interfere with the action of pepsin or ptyalin; for the same purpose 0.5 to 1 per cent. of *glycocholic acid* is required, and even this quantity has little influence on the action of pepsin. The saccharifying influence of the pancreatic juice is destroyed by 0.1 per cent. of either acid.

SOME DERIVATIVES OF ALBUMEN.

The immediate products of the decomposition of albumen have been the subjects of an extended study by W. Kühne and R. H. Chittenden. In accordance with the results of recent observers, the transformation of albuminoid matters into peptones by the action of gastric or pancreatic juice has been considered as a series of hydrations, which start with the albuminoid matter and progress to syntonin, protopeptone, and peptone. Meissner believed that the albuminoid molecule was decomposed by peptonization; and under the name *parapeptone* he described one of the products of this decomposition which resisted the action of gastric juice. However, Meissner's results have been contradicted, and his *parapeptone* has been stated to be a mixture. On the other hand, Schutzenberger has shown that when albumen is boiled with dilute sulphuric acid it separates into about equal propor-

tions of a soluble substance resembling the peptones and named by him *hemialbumine*, and an insoluble matter which he called *hemiproteine* and found to resist completely the further action of dilute acid.

After studying these facts, and from personal experiments, Kühne and Chittenden conclude that during its conversion into peptones an albuminoid molecule first undergoes a separation into two substances, which subsequently become hydrated, but with very unequal rapidity. By the action of pepsin, one of these substances, *hemialbumose*, readily furnishes a *hemipeptone*, which is quickly destroyed by trypsin with formation of leucine, tyrosine, etc. The other substance, *antialbumose*, is only slowly attacked by pepsin, more rapidly by trypsin, and yields an *antipeptone* which entirely resists the further action of trypsin, and furnishes no leucine or tyrosine if the production of putrefactive bacteria in the mixture be prevented. There is also another matter, *antialbumide*, probably derived from antialbumose. All these different products of hydration may be obtained from blood-albumen, egg-albumen, syntonin from muscles, and from fibrin.

It would follow that the body heretofore described under the name peptone is a mixture of antipeptone and hemipeptone. Hemialbumose is identical with protopeptone and a substance discovered by Bence Jones in the urine of a patient suffering from osteo-myelitis: it is probably a mixture of two substances, one of which is much more soluble in water than the other. The hemiproteine of Schutzenberger is the antialbumide of Kühne and Chittenden, and hemialbumine is a mixture of hemialbumose and hemipeptone.

THE CAUSE OF COAGULATION OF PLASMA.

According to L. Wooldridge, blood-plasma which by continual centrifugal agitation has lost its coagulability from the action of carbon dioxide, again coagulates when treated with the evaporated alcohol-etheral extract of white corpuscles. This extract contains lecithine and a small quantity of fatty acids, from which it appears that lecithine is a factor in coagulation. The presence of a ferment cannot be admitted, for the extract retains its activity after boiling with water. Lecithine derived from the red corpuscles produces effects entirely analogous to that extracted

from white corpuscles, but that obtained from eggs is in most cases entirely inactive. The inactivity is ascribed to the presence of neurine, which always remained in the inactive preparations. Since the plasma, free from corpuscles, can be coagulated by the fibrin ferment only after treatment with carbon dioxide, it appears probable that the plasma does not contain fibrinogen already formed, but a substance capable of conversion into fibrinogen.

PTOMAÏNES AND NEURINE.

Z. Marino Zucco calls attention to the fact that his analyses of the cadaveric alkaloids have shown that these substances are neurine, and he considers that to this compound must be attributed all the ptomaïne reactions obtained by Selmi and others from cadaveric extracts. He has found that the physiological action of neurine is quite comparable with the effects of the ptomaïnes studied by Selmi.

In an article partly in reply to the above, L. Brieger admits that the substance which he had extracted from decomposed horse-flesh and horse-liver has proved to be neurine, and considers that it is derived from a putrefactive transformation of choline, with elimination of a molecule of water. Although Schmiedeberg has stated that choline has no toxic effect on animals, Brieger finds that it possesses marked poisonous properties, but only when administered in comparatively large doses. One decigramme of choline hydrochloride was required to produce effects similar to those of five milligrammes of neurine hydrochloride. He also remarks that a study of the results obtained by Selmi, Nencki, and Gautier and Etard is sufficient to demonstrate that Selmi's ptomaïnes do not consist wholly of neurine.

INTRAVENOUS INJECTION OF SALINE SOLUTIONS.

The injection of dilute common salt solution and albuminous liquids into the veins in replacement of blood has been newly studied by Ott, and his results are somewhat in discordance with the previous publications on the subject. In 1869, Cohnheim stated that the venous injection of a 0.6 per cent. solution of salt would save the lives of animals after the loss of as much as two-thirds of the entire quantity of blood. Ott finds that the organic constituents of the blood cannot be reduced below one-half the normal quantity, and

that then after the injection of salt solutions from twenty-six to fifty-one days are required before the blood again becomes normal; the number of red corpuscles attains the normal in from sixteen to forty-seven days. The same replacement occurs after removal of blood followed or unfollowed by the injection of blood-serum, but the latter, as well as defibrinated or whole blood, produces better effects than the salt solution. The addition of egg-albumen to the blood entirely fails of effect, as is shown by an increased excretion of urea. Foreign blood-corpuscles cannot live in the organism, notwithstanding the contrary statements of Panum. After the injection of blood, hydræmia and oliocythæmia are as apt to occur as after the injection of salt solution, but these effects are developed more gradually and disappear more slowly in the former case than in the latter.

HYPODERMIC INJECTIONS OF IRON.

Glaevecke has experimented upon dogs and men with *hypodermic injections of iron salts*. The experiments on dogs demonstrated that the citrate is most quickly and most thoroughly absorbed, and that ferrous sulphate is entirely absorbed if mixed with two or three times its weight of sodium citrate. The albuminate of iron is badly borne, while ammonio-ferrous sulphate is not absorbed at all. The pyrophosphate with sodium citrate, recommended by Neuss, possesses no advantage over the citrate, while it has the disadvantage of being more readily decomposed. After injections of the citrate, the presence of iron may be detected in the urine in half an hour, and in from two to four hours the elimination attains a maximum, as is evidenced by the dark color of the urine; after twenty-four hours there is no further elimination. In from four to six hours the quantity of iron in the bile is increased above the normal proportion, and, because the iron can here be detected as oxide, Glaevecke thinks that only this form exists in the system. Adults manifest no symptoms of poisoning after daily injections of one decigramme of the citrate, but the administration of two decigrammes is followed by vomiting and purging. The therapeutic effects of hypodermic injections of the citrate are said to have been satisfactory.

RELATIVE WASTE IN INANITION.

M. Rubner has studied the influence of the size of animals on bodily waste, the

experiments being made on fasting dogs, and finds that this waste is as the ratio of body-surface to weight. Large and small dogs expended 1143 calories in twenty-four hours per square metre of surface. Both albumen and fat participate equally in the waste. The following table is interesting as showing the relations between weight, surface, and waste:

Weight in kilos.	Surface in square centimetres per kilogramme.	Calories per kilo. in twenty-four hours.
31.2	344	35.68
24.	366	40.91
19.8	379	45.87
18.2	421	46.20
9.6	550	65.16
6.5	573	66.07
3.2	726	88.07

AN EXPERIMENTAL RESEARCH ON THE UTERO-PLACENTAL CIRCULATION.

BY J. P. PYLE, M.D.

THE exact method of the utero-placental circulation is a question that has for a long time occupied the thought and pens of medical writers. During the term of my medical studies in the University of Pennsylvania, my attention was directed to this subject as being one well worthy of research. Opportunity having offered, I undertook a series of experiments in the Pathological Laboratory of the above-named institution, under the guidance of Dr. H. F. Formad. The question was formulated and presented thus: Is there a communication between the maternal and placental blood-vessels which permits of the transmission of solid particles from the mother to the fetus? This is a matter which is by no means settled, either positively or negatively; and mere opinions on the subject are valueless. The problem is one that can be settled only by direct experimentation. Its importance can be readily seen, for upon its solution depends, in a great measure, the decision of many moot points in physiology and pathology. Upon it depend, to a certain extent, the following questions: (1) that of heredity; (2) the transmission of various so-called infectious diseases; and (3) possibly the transmission of tumors, syphilis, septicæmia, etc. As a means of attempting a solution of this problem, I began experimenting with pregnant animals.

At the outset, two methods of experimentation presented themselves to my mind: the first consisted in an endeavor to transmit solid colored granules from the mother to the foetus; the second, to transmit minute fungi to the foetus by means of septicaemia in the mother, it being a well-known fact that the blood in this affection is crowded with bacteria, both during life and after death: in other words, I wished to ascertain whether or not septicaemia in the mother would be conveyed to the foetus in utero.

The experiments, with the above-named objects, were undertaken in a manner hereafter to be described, and I obtained results which, though at times marked by partial failure, were yet so uniformly positive that it would seem to indicate that there is some means of direct communication between the maternal and foetal structures. Finally, for the purpose of attempting to demonstrate this mode of communication, I propose to give a systematic synopsis of my experiments and methods of manipulation. I will first detail the methods of work, giving also a record of the experiments, and then an account of some observations which I had a rare opportunity of making upon the human subject.

METHODS OF EXPERIMENTATION.

The experiments were made, for the most part, upon pregnant rabbits. On one occasion I had an opportunity of making a study on the human being: this was in the case of a woman who died of septicaemia in the eighth month of gestation. In order that the details of the experiments may be clear, I will describe the exact methods of the work and the modes of procedure. In the first series of experiments, an insoluble pulverized substance was injected into the circulation of pregnant animals,—ultramarine blue, in the form of a fine powder, being the substance selected. It was rubbed in a mortar with glycerin, and sufficient water added to permit its being used in a hypodermic syringe. A drop of the ultramarine liquid thus prepared showed under the microscope granules varying in size and measuring from 1-20,000 to 1-5000 of an inch in diameter. The ultramarine liquid was in all instances introduced into the circulation by means of a hypodermic syringe. As a rule, the jugular veins, being more

easy of access, were selected as a point of entrance; but in a few cases the liquid was placed in the abdominal aorta, and in a few instances thrown into the left ventricle of the heart. In every experiment the animal was completely anaesthetized. A second series of experiments was made by inoculations with septic materials crowded with bacteria. The substances used were sloughs taken from cases of phlegmonous erysipelas, false membranes from diphtheritic throats, etc., these being placed immediately beneath the skin. The result was always a suppurative inflammation, which led promptly to the death of the animal from septic poisoning in from two to five days. In all these cases of septicaemia the blood was filled with a multitudinous number of micrococci. Now, my object was obviously this: to determine whether or not these micrococci, being solid particles, would be transmitted to the foetus.

RECOGNITION OF THE MICROCOCCI.

As there is often great difficulty in distinguishing bacteria from other minute organic and inorganic particles, I will briefly give the methods I employed, which were principally those pointed out by Drs. Wood and Formad in their researches on diphtheria. When the micrococci appear in zoöglea forms, they are readily distinguished by an experienced eye. The micrococci of a zoöglea mass are always of a uniform size, and are always at the same distance from one another. On the contrary, fat-molecules and albuminous particles vary in size, and are at varying distances from one another. Micrococci may arrange themselves in pairs or in chains,—in contradistinction to non-living molecules or granules, which do not. In the strong acids and alkalies, alcohol, and ether, the micrococci are insoluble, while fat and most other molecules are readily soluble. Another method which I found quite serviceable consisted in simply treating the cut sections with a mixture of equal parts of glycerin and acetic acid. The micrococci in such preparations become yellowish brown and prominent amid the perfectly translucent structures. In examining the foetal tissues for either the coloring-matter or bacteria, absolute cleanliness was observed: the instruments and dishes were all previously washed in alcohol, as were the glass slides and covers.

They were also heated in a spirit-flame, so as to avoid all possibility of extraneous particles coming in contact with the preparation. The mounting-material was also subjected to a careful search for foreign matters, so as to avoid useless results and misinterpretations. The *foetuses* and *placentae* themselves were also carefully washed in alcohol if any suspicion arose that they were contaminated with foreign particles. Furthermore, the remarkable regularity of the results would seem to exclude all possibility of accidental admixtures. I premise these remarks to show that all sources of error were considered and carefully guarded against.

ANATOMY OF THE UTERO-PLACENTAL CIRCULATION.

This subject, on which authors have differed in all ages, is still a matter of dispute among modern physiologists; and, although the immediate continuation of the uterine and placental vessels is almost universally denied, yet the mode of circulation from the mother to the *foetus* is still, notwithstanding thorough investigation, involved in much uncertainty,—especially as certain pathological conditions indicate that the intercommunication above referred to is, at least, probable. At this point, I desire to quote the views of Prof. Haeckel on this subject, they being accurate, concise, and recent. In his “*Evolution of Man*,” vol. ii. p. 155, he says, “The nature of the placenta is this: the branches of the blood-vessels which traverse the wall of the allantois penetrate into the hollow tufts of the chorion, which are inserted into corresponding depressions in the mucous membrane of the maternal uterus. As this mucous membrane is also abundantly supplied with blood-vessels, which conduct the maternal blood to the uterus, and as the partition between these maternal blood-vessels and the embryonic vessels in the chorion-tufts soon becomes extremely thin, a direct exchange of substance is soon developed between the two sets of blood-vessels, which is of the utmost importance to the young mammal. The maternal blood-vessels do not, however, pass directly [anastomosis] into the blood-vessels of the embryonic chorion-tufts, so that two kinds of blood simply mix; but the partition between the two sets of vessels becomes so thin that it permits the passage of the most important food-materials, freed from unnecessary

matter [transudation or diosmosis].” The above observations of Prof. Haeckel are highly suggestive, as he clearly points out that, although no direct vascular communication is proved, yet the maternal and *foetal* vessels are in such close proximity as to allow not only the osmosis of fluids, but to make also the transmission of solid particles not impossible, according to his view. The walls of ordinary blood-vessels, through which white blood-corpuscles migrate in any part of the body, are by no means thicker than the materno-*foetal* membranes above referred to; and hence it appears to me very plausible that blood-corpuscles might easily penetrate the latter. To test this proposition, I resorted to direct experimentation, in a manner already detailed. These experiments consisted in the introduction of solid particles—*e.g.*, ultramarine blue and bacteria—into the circulation of a pregnant animal; and, on subsequent examination, they were found distributed not only throughout the maternal body, but also in that of the *foetus*: this was especially so in the series of experiments which consisted of septic poisoning induced artificially in the mother, in which not only the blood of the *foetus* but the various tissues of the body were gorged with the bacteria,—which is contrary to the few observations made by others. No one previous to this time had tried to induce septicæmia in animals intentionally with the idea of watching its effects on the *foetus*; whereas I think this is one of the best methods of observing a possible transition from the maternal to the *foetal* blood of solid particles, such as bacteria unquestionably are. Bacteria cannot penetrate tissues unless by pre-existing channels; and should they be transmitted from mother to *foetus*, then it is evident that some kind of intercommunicating channels do exist. It was for the purpose of demonstrating this fact that the experiments with septic material containing bacteria were undertaken.

EXPERIMENTS.

Experiment I.—Into the right jugular vein and subcutaneous tissue of a pregnant rabbit was injected some of the ultramarine liquid, in the manner above described. The animal was carefully guarded, and at the end of seven days I injected some more of the blue into the right jugular vein. In about half an hour from the last injection the animal was killed.

Post-Mortem Examination.—But two small foetuses were found in the uterus.

Microscopic Examination.—Particles of the coloring-matter were found in the maternal blood and tissues.

Examination of the Foetuses.—The heart, liver, and kidney of the first foetus were examined, but yielded negative results only. After a prolonged search, with teased preparations, in a portion of the neck were found several particles of blue. In the second foetus, likewise, most of the thoracic and abdominal viscera yielded negative results,—the liver alone rewarding my search. Placenta contained the blue. Cord not examined.

Experiment II.—The left jugular vein of a pregnant rabbit was exposed, and a quantity of the ultramarine liquid injected into it. In about three-quarters of an hour the animal was killed. Results entirely negative.

Experiment III.—The right jugular vein of a pregnant rabbit was injected with a quantity of the ultramarine liquid. Three hours subsequently the animal was killed. Post-mortem examination showed the lungs of the mother quite full of the blue. In this instance it could readily be seen with the naked eye.

Examination of the Foetuses.—They were all so small that the various organs could not be distinguished. Portions of each were teased, mounted, and examined in glycerin, with the following results: first, blue was present; second, blue granules found; third, blue found also in this one; fourth, in this one also the blue was found, and, as in the previous instances, in small amount. Placenta contained the blue. Blood expressed from the cord was found also to contain the coloring-matter.

Experiment IV.—Both jugulars of a pregnant rabbit were injected with the ultramarine liquid. The animal was carefully guarded till five days later, when it was again etherized, the abdominal walls carefully divided, and a quantity of the blue solution introduced into the abdominal aorta. Some was also injected into the left ventricle of the heart.

Microscopical Examination.—Blue found in all the maternal tissues, the walls of the gall-bladder especially containing it. Portions of each foetus were teased, mounted in glycerin, and examined, with the following results: first, negative results; second, positive results; third, positive results; fourth, positive results; fifth, positive results also. In all of these examinations different portions of the animals were selected. Placenta contained the blue. The cord also contained blue granules.

Experiment V.—Both jugular veins of a pregnant rabbit were injected with the ultramarine liquid. There were also made a number of hypodermic injections into the cellular tissue of the animal. Three days after the injection the animal was killed. Microscopical examination showed the blue in all the

maternal tissues. Portions of each foetus were teased, mounted in glycerin, and examined, with the following results: first, blue found in small amounts; second, negative results; third, negative results. Umbilical cord, blue granules were found adherent to the vessel-walls. Placenta also contained some blue granules.

Experiment VI.—Injected into the jugular veins of a pregnant rabbit some of the ultramarine liquid. Animal died in one hour. Results entirely negative.

Experiment VII.—The right jugular vein of a rabbit well advanced in pregnancy was injected with the ultramarine liquid. Three days subsequently the abdomen was opened and an injection made directly into the abdominal aorta. The left ventricle of the heart was also injected.

Microscopical Examination.—Blue granules found in all maternal tissues. First foetus, blue granules found, several having lodged in the liver; second foetus, blue granules found in small quantities; third foetus, blue granules found well distributed. Placenta yielded blue granules. In the cord also the blue matter was found.

Experiment VIII.—Both jugular veins of a pregnant rabbit were injected with the ultramarine liquid. Three hours after the injection the animal was killed. Microscopic examination showed the blue well distributed in the maternal tissues. A prolonged examination of foetuses and placenta yielded negative evidence only.

Experiment IX.—A rabbit well advanced in pregnancy was used. Both jugular veins were injected with the ultramarine liquid. Six hours subsequently the animal was killed. Examination of the foetuses gave the following results: first foetus, the blue granules were present; second, gave positive results; third, positive results,—several blue granules having lodged in the liver; fourth, negative results; fifth, several blue granules were found. Placenta also contained the blue granules. Cord, too, gave positive results.

Experiment X.—Both jugulars of a pregnant rabbit were injected with the ultramarine liquid. Two days later some of the same mixture was thrown into the abdominal aorta. Microscopical examination gave the following results: first foetus, positive results; second, positive results; third, negative results; fourth, positive results. The placenta and cord both contained the blue granules.

Experiment XI.—Both the jugular veins of a pregnant rabbit were injected with the ultramarine liquid. Two days later the right jugular vein was again injected. The animal was killed about one hour subsequent to the last injection. Microscopic examination gave the following results: first foetus, negative results; second, positive results; third, negative results. Placenta also contained a few of the colored granules. Cord not examined.

Experiment XII.—Both jugular veins of a pregnant rabbit were injected with the ultramarine liquid. A quantity of the same mixture was thrown into the loose connective tissue. Three days later the abdominal aorta was injected, also the left ventricle of the heart. Teased preparations of the fœtuses were mounted in glycerin and examined, with the following results: first fœtus contained blue granules; second gave positive results; third, positive results also; fourth, several blue granules were found. Placenta and cord not examined.

Experiment XIII.—Left jugular vein of a pregnant rabbit injected. Four hours after the injection the animal was killed. Results entirely negative.

Experiment XIV.—Both jugular veins of a pregnant rabbit injected with the ultramarine liquid. The following day the abdominal aorta was also injected. One hour later the fœtuses—three in number—were removed from the uterus and examined,—all giving positive results.

Experiment XV.—Some of the ultramarine liquid was introduced into both jugulars of a pregnant rabbit. The following day the animal was killed. Microscopical examination gave the following results: first fœtus contained the blue; second fœtus gave negative results only; third fœtus contained the blue granules; fourth fœtus contained the blue granules; placenta contained the blue. Cord not examined.

Experiment XVI.—The left jugular vein of a pregnant rabbit was injected with the ultramarine liquid. The following day the right jugular was injected. The animal was killed in about fifteen minutes after the last injection. *Microscopical Examination:* first fœtus contained the blue; second fœtus contained blue granules; third fœtus contained blue granules; placenta, blue granules found in this organ; in the cord, also, the blue was present.

Experiment XVII.—A rabbit well advanced in pregnancy was used for experiment. Injected both jugular veins with the ultramarine liquid. Two days subsequently the jugular veins were again injected. At this time the abdominal aorta and left ventricle of the heart were injected. *Microscopical Examination:* first fœtus, negative results; second fœtus contained the blue; third fœtus contained the blue; fourth fœtus contained blue granules; fifth fœtus also had the blue in it. Placenta contained the blue granules, as did the cord.

Experiment XVIII.—Both jugular veins of a pregnant rabbit were injected with the ultramarine liquid. About five hours after the injection the animal was killed. Examination of the four fœtuses gave the following results: first fœtus contained the blue; second fœtus, blue found in this one; third fœtus, this one contained the blue, it being found

especially in the liver; fourth fœtus, negative results; placenta contained the blue, while the cord did not.

Experiment XIX.—Both jugular veins of a pregnant rabbit were injected with the ultramarine liquid. The animal was killed in six hours. *Microscopical Examination:* the blue was found in all the maternal tissues; also in each of the three fœtuses; placenta and cord both contained the blue granules.

It will now be readily seen that the entire number of experiments undertaken with the ultramarine liquid was nineteen, and of these, sixteen were more or less successful, three only being entire failures. I may further state that, owing to many causes not under my control, a number of other experiments were lost.

(To be continued.)

A CORRELATION THEORY OF COLOR-PERCEPTION—A PRELIMINARY NOTE.

BY CHARLES A. OLIVER, A.M., M.D.,

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FROM time to time, various theories of color-perception have been promulgated, each based upon an endeavor to harmonize an arbitrary and unscientific naming of visible color with a gross, unnatural division of nerve-fibre. Accepting, as we must, the Huygenian hypothesis of the imponderables, and that the peripheral portion of the human visual apparatus is adapted to the receipt of undulations equivalent to those existent between the extremes of natural color-vibration, we are brought to a third assertion, that as all natural imponderable stimuli are the resultants of a mere difference in the number of vibrations of one and the same ether, the organs for the receipt of the different varieties must be but analogues and modifications of each other. This can be readily proven by a comparison of the senses. How absurd it would be to attempt to apply either Young's or Hering's theory of color-perception to the sense of touch, or with similar imaginative theorems for musical tones or chosen odor names, when we have the difference in response dependent upon a difference in cause acting upon an ever-ready material; a difference in the character of natural impression affecting the same character of organic element to a greater or less degree, producing exact and equivalent results. Each and every optic-nerve fibre-tip has a

receiving power equal to its individual vital strength; each and every healthy optic-nerve filament transmitting to the color-centre, for recognition, nerve-energies equal to as many special sensations as its peripheral tip is capable of receiving. The innumerable quantities of nerve-filaments placed side by side on a sheet or membrane, serving to give greater field and allow many colors to be seen at one and the same time, thus make our every-day and momentary picture. Therefore, the most rational theory that can be brought forward is, that color-perception takes place in each and every optic-nerve filament, and consists in the passive separation of a specific nerve-energy equal to the exposed natural color, from a supposed energy-equivalent resident in the nerve-tip, by an active chemico-vital process of the impinging natural vibration upon the sensitized optic-nerve tip; the separated energy being transmitted to the color-centre, where it is recognized. The healthy nerve-tip returning to its energy-equivalent the moment the specific energy, separated by the received natural vibration, has been forwarded for recognition, when it is again ready to receive any other natural color-vibration that may be cast upon it.

By the title it will be seen that it is the intention of the author to discuss this theory more at length. He sends this forward not as a preconceived notion, but as the result of much thought and careful experiment. The extended reasons and the details of both physiological and pathological research, he has combined in a paper which will be soon ready for publication, as it is his firm personal conviction that color-perception, which is the only sensory office of the visual apparatus in itself, is the result of an action of natural color-vibration upon a series of identical physical nerve-elements of relative powers, so modified from the simpler though correlative sensory forms as to be able to respond to undulations equal to those that are productive of natural color. The difference in the amounts of the perceived color being dependent entirely upon the ability of one and the same perceiving element to give answer to the number of vibrations necessary to the production of those colors. The response consists in three separate and distinct factors—receipt, conduction, and mentality (sensation, transmission, and perception). The

first resident in the eye itself; the second in the optic nerve; and the third in the cerebral color-centres. Each and all of these are dependent upon a specific vital energy, causing true molecular change.

1507 LOCUST STREET.

TRANSLATIONS.

PEPTONURIA AS A SYMPTOM OF DIFFERENT DISEASES.—The following conclusions, taken from the work on this subject by Dr. Fenomenow, have great importance for the practising physician:

1. Peptonuria always occurs in the final stage of croupous pneumonia, and is in direct relation to the absorption of the croupous exudation.

2. The presence of peptone in the urine in cases of nephritis is perhaps dependent on the peptonization of the tubercasts.

3. In pulmonary phthisis, the peptonuria is dependent not upon the extent of tissue implicated, but upon the rapidity of the destructive process.

4. In typhoid fever accompanied by constipation and a temperature above 40° C., peptonuria is a frequent appearance.

5. Occasionally peptonuria occurs in scarlet fever, in exudative pleurisy, in nephritis, in puerperal disease, and in disturbances of compensation in heart-diseases.—*Deutsche Med. Zeitung*, May 8, 1884. S.

COEXISTENCE OF BOTHRIOCEPHALUS LATUS AND TÆNIA SOLIUM.—Dr. Brandt, of St. Petersburg, reports in the *Russkaia Meditsina* a case of a soldier's widow who had symptoms of tænia. Her diet was principally ham and fish. Two drachms of ethereal extract of male fern caused the discharge of two bothriocephali lati and one tænia solium. A similar case is mentioned by the reporter in the *London Medical Record* for April 15.

AORTIC LESION PRODUCING A SYSTOLIC MURMUR AT THE APEX.—Dr. Weill calls attention to the fact that whereas the custom of localizing murmurs by their external point of greatest intensity is generally correct, there are exceptions to the rule. He reports a case in which atheroma of the aorta and diseased sigmoid valves caused a systolic bruit over the apex, the mitral leaflets being normal.—*Revue de Médecine*, March.

PHILADELPHIA
MEDICAL TIMES.

PHILADELPHIA, JUNE 28, 1884.

EDITORIAL.

HYGIENE OF SUMMER TRAVEL.

THE migratory impulse which seizes upon all true Americans, especially at this time of the year, leads a very large portion of them in every community to seek to leave home for a more or less protracted period of time, and to undertake journeys of varying length, during which they intrust their life, liberty, and property to various corporations who furnish trains, steamships, and hotels for their accommodation.

In the course of these journeys acquaintance is often made with new scenes and unfamiliar surroundings, and experience is enlarged, at greater or less cost to the individual, in many directions. If all the disagreeable possibilities of travel were taken into consideration,—the disasters by rail, the wrecks by sea, the unwholesome and badly-prepared food, the strange beds of unknown history, the contagion in waiting-rooms, the malaria acquired by night travel through swamps, the infection lurking in carriages, the lightning-stroke, and the many moving accidents by flood and field,—it is probable that the propensity to journey from home would be measurably checked, and that many would endeavor to put up with the ills they have, rather than fly to others that they know not of. With the hopefulness of the race, however, these disadvantages are almost universally ignored, and the risks taken deliberately, in view of the many advantages to health arising out of a change of air and scene and the escape from the ordinary routine of existence.

Apart from these ordinary accidents, which, although relatively rare, should be

considered as part of the risks of travel, there are individual possibilities which should not be omitted from consideration in preparing for a summer tour. A certain proportion of those who leave home will be taken sick *en route*, from causes which were latent on starting, such as typhoid fever, or which were progressing unobserved, such as apoplexy, uræmia, or diabetic coma. The recent and lamented death of the eminent Prof. A. Wurtz, of Paris, was due to blood-poisoning following voluntary retention of urine for several hours, owing to the want of convenient opportunity for evacuation of the bladder during a somewhat prolonged railway-journey. To those who expect to travel in Europe this will suggest the carrying of a rubber urinal or bottle which might be used in case of need. If the demands of nature were considered as being more imperative and obeyed more willingly when travelling, much suffering and sickness would be averted.

The possibility of sudden unconsciousness during a journey makes it advisable to have the name and address of the friends of the individual, not only in the pocket-book, for this might be stolen, but elsewhere upon the person, so that they might be promptly notified in such an emergency.

The *British Medical Journal*, some years ago, announced to the travelling public that safety from the typhoid-contaminated water of the wells of Europe consisted only in the exclusive use of water obtained from a reliable source, such as the Apollinaris. Allowing for some exaggeration, this warning is well founded, and should be reiterated. We would also direct attention to the fact, now generally admitted, that ice may be contaminated as well as water. In this country it is not likely that any large proportion of the travelling public will take such a precaution, and in consequence many will suffer from bowel disorders due to the "change of water." When this occurs, it is proper to restrict the drink to water which

has been boiled, and cooled by being placed in bottles *on* the ice, not by putting pieces of ice *in* it. Cold tea also answers a similar purpose. The habit of its use in China probably in this way became universal there on account of the pollution of the water-supply by the filthy mode of living of the natives.

In case of sickness in a strange hotel it is better to obtain the opinion of a good druggist as to the physician to select, than to follow the (too often interested) advice of the hotel-keeper or clerk. Even in the principal cities of this country the physicians to the hotels do not always owe their connection to their merit; but in Europe the combination of the hotel-keeper and the physician often amounts to little better than a conspiracy to defraud the sick stranger. It is better, very often, for the traveller to apply for treatment at a large hospital than to be subject to extortion and ill treatment in a hotel, where usually there are scanty conveniences for treating the sick.

A small stock of medicines will prove useful in preventing illness: seidlitz powders, cathartic pills, brandy, cholera-mixture, paregoric, aromatic spirits of ammonia, soda-mint, ginger, a few opium suppositories, quinine pills, and prepared mustard-leaves, will often be of inestimable value in emergencies. If, with these at hand, due regard be paid to regularity of habits, maintaining, as nearly as possible, the hours for eating and sleeping to which one has been accustomed at home, and due attention to nature's needs, avoiding too much fatigue, and paying proper attention to clothing, the traveller may indulge the promptings of the Berserker spirit that lingers in his blood, and may wander far in quest of health and pleasure, to return, when the summer solstice is past, with renewed vigor to resume his daily tasks, often to find them lightened, since to his increased physical strength they are less burdensome.

THE STUDY OF RABIES BY PASTEUR.

BY invitation of M. Pasteur, a commission has been appointed to test the validity of his claims, about which there has been some misunderstanding, owing to the zeal of the reporters for the daily papers. In a recent communication, Pasteur has denied the sensational statements of the public press that he had discovered and isolated the *materies morbi* of rabies, and that he had promised to grant immunity to the human subject from natural rabies by preventive inoculation. His claim was simply that, from the results of many experiments, he had found that the brain of a mad dog pre-eminently contains the morbid poison, and that, inoculated into apes, the poison becomes successively less and less active; while on the contrary, if rabbits be used instead of apes, the poison becomes more virulent; by combining the two methods he obtained virus of different degrees of strength. He claimed, further, that the injection of the modified virus under the skin of a dog will not give him rabies, but will render him proof against subsequent inoculation with virulent matter or the bite of a mad animal.

The Minister of Public Instruction of Paris has been invited to superintend the following experiment: M. Pasteur will by previous inoculation render twenty dogs insusceptible to rabies, and these, with twenty others unprotected, will then be bitten by mad dogs; and it is confidently predicted that the first twenty will enjoy entire immunity, while the second series will all die of rabies.

We have no doubt that the result will be just as M. Pasteur says it will. From our previous knowledge of the subject, however, we should have thought that all of the twenty dogs of the second series would not acquire rabies, and certainly that it would not be uniformly fatal; for

we did believe that a large proportion of animals bitten by a rabid dog escape the disease. Even animals that are inoculated with fresh, warm saliva from the mouth of a rabid dog do not in all cases contract rabies, and the susceptibility varies in different species.

But "they do these things so much better in France" that we shall not be surprised to learn that the experiment has been pronounced a brilliant success. We shall, however, reserve final judgment as to the value of preventive inoculation for rabies until these claims receive confirmation from independent observers. We hope soon to learn what results will be obtained by Dr. Klein, of London, from repeating these experiments. In the mean time, we can hardly agree with the *Lancet* that rabies is defeated.

THE ADMISSION OF WOMEN PRACTITIONERS TO THE MASSACHUSETTS MEDICAL SOCIETY.

THE Massachusetts Medical Society, at its one hundred and third annual meeting, held in Boston, June 11, among its other interesting and important business, adopted the following amendment to its by-laws, on motion of Prof. Bowditch:

"Candidates for admission into the Massachusetts Medical Society may be either male or female, and every candidate must, by proper credentials and examination, satisfy the Censors of said Society that he possesses the following qualifications for fellowship," etc.

While the passage of this amendment reflects credit upon the Society as an act of justice to a small class of legally qualified medical practitioners, yet there seems some ground for a fear that, in a long-established and wealthy community, the admission of women to the medical societies on equal terms with men will encourage a class of *dilettante* doctors,—women who enter at

medical schools as a relief from china-painting and South Kensington art-work and other like serious pursuits, and who receive a diploma in due course, without having any real appreciation of the dignity or the duties and responsibilities of the medical degree. Such practitioners, having very limited views of the domain of medicine, are too apt to become sectarians or specialists and indulge in irregular practices which bring discredit upon the profession. It is unfortunate that the offences of these individuals have been visited upon others who are earnestly striving to maintain an honorable position in the ranks of the profession, but it is certainly the case; and the task of distinguishing between the reputable and unworthy is so difficult that it has caused some medical societies to refuse women admission altogether to their meetings. Such a course works injustice to the few, but protects important interests that are threatened by the admission of the many. The problem is how to exclude the unworthy and yet not deprive others of their rights as members of the profession.

In view of the difficulties which beset the question of the general admission of women to our medical societies, it might be expedient to increase the standard of age, requiring each applicant to be at least thirty years of age and to have been at least five years engaged in the actual practice of his profession. It is also important, as a matter of record, that the date of birth should be entered upon the application for membership and be entered on the minutes of the Society. It may be set down as an assured fact that practitioners of medicine who would object to respond to such a requirement are unworthy of a professional passport.

THE *Medical World* has issued a valuable chart of urine-analysis as a premium for new subscribers. The *World* and the chart for one dollar.

NOTES FROM SPECIAL CORRESPONDENTS.

LOUISVILLE, KENTUCKY.

DEAR SIR,—While the profession of Kentucky is apparently enjoying a holiday, the surface of the placid stream of professional events has recently had the slightest ripple to cross its bosom, occasioned by the meeting of the State Society. At Bowling Green—that lovely little city in the southern part of this grand old commonwealth—there assembled, on June 3, a large number of her medical practitioners, and the 5th brought the closing ceremonies and festivities of a profitable and harmonious meeting, the 6th a gathering of grip-sacks and a rustling of rejuvenated feet to catch the early train, some for home, business, pills, and powders, others to continue a pleasant visit by an excursion to Mammoth Cave. A review of the current topics, good, bad, and indifferent, as discussed in the meeting, may not be uninteresting, and (your consent already obtained by letter) I shall do them in short order.

The literary exercises of the meeting were begun by the report of the Committee on Medical Ethics, by Dr. Andrew Seargent, of Hopkinsville. No discussion followed its reading, from which the legitimate inference may be drawn that the views of the writer were not precisely in harmony with the sentiment pervading the general mind.

A general dislike to chloral seems to be springing up among the best practitioners, and many wishes for something more efficient and less treacherous to substitute for it were expressed. Hyoscyamin received, likewise, adverse criticism. Kairin as an antipyretic was regarded as inferior to salicylic acid and quinia, and only efficient in dangerous doses.

"The Modern Theory of the Nature of Glaucoma" was ably presented in a paper by Dr. R. M. Ferguson, of Louisville, and the singular statement made in the discussion by Dr. A. W. Johnstone, of Danville, that seventy per cent. of the cases presenting at the clinics in New York occurred among the Jews. This was regarded by some as susceptible of explanation only upon the ground of "personal peculiarities, or the fact that they do not eat pork."

Since the question of anæsthesia is one of ever-present importance, and just now undergoing considerable discussion in reference to its induction by the rectum, the occasion may be opportune to note that Dr. A. M. Vance, of Louisville, has suggested a modification of the usual induction of local anæsthesia, in this, that he has found that the skin loses its susceptibility to pain a very few seconds after the ether-spray begins to fall upon the part. Recognizing this, he has been able to begin cutting without at all freezing the parts. Under this application of it a tracheotomy has

been successfully performed, an eye enucleated, a fibrous tumor removed from the sacrum of a man, and tenotomies frequently performed, without the patients' being aware that the operations had been begun.

In response to a question as to its action upon mucous surfaces, Dr. J. M. Mathews, of Louisville, said he had hailed this announcement by Dr. Vance with no little degree of satisfaction; that he immediately put it in practice in applying ligatures to hemorrhoids in four or five cases, but, judging by his experience with them, the number would not be materially increased.

In the report of the Committee on Improvements in Surgery, by Dr. L. S. McMurtry, of Danville, the writer called attention to the very confident views expressed by the late Dr. Marion Sims in 1882, which he thus quoted: "I have the deepest conviction that there is no more danger of a man's dying from a gunshot or other wound of the peritoneal cavity properly treated, than there is of a woman's dying of an ovariectomy properly performed;" and remarked that in the able paper of Dr. Parks, recently given to the profession, on this subject, this statement of Dr. Sims was deemed prophetic.

Dr. D. W. Yandell, of Louisville, objected to this view *in toto*, as not expressing the real condition of our resources. He said, "Of six cases of gunshot wounds of the abdomen, four will die,—one of peritonitis, two of hemorrhage, and one of septicæmia. Twice as many will die of hemorrhage as anything else. In ovariectomy there is this advantage,—that, while you expect hemorrhage, you know when and where it will probably occur, and are prepared to meet it. This declaration of a great man, published in a moment of enthusiasm, is misleading. It is not borne out by facts, nor likely to be."

Dr. Stone, of the Western Kentucky Lunatic Asylum, emphasized the importance of the most complete thoroughness in the diagnosis of abdominal tumors, by the relation of a case in which several eminent men had figured, one after the other of whom had been led to concur in a diagnosis of ovarian tumor and the advisability of immediate operation. By repeated examinations, in which the sound was used, abortion was finally produced the day before that set for the operation, the patient giving birth to a six-and-a-half-months' child, which died the day following.

In commenting on the subject, Dr. D. W. Yandell related two or three such cases, as illustrative of mistakes that may occur. He said, in substance, "Professors Miller and Bayliss diagnosed an abdominal tumor to be ovarian, and not until the woman gave birth to a child was their mistake discovered. Some years afterwards, a woman came from Mobile. She was a widow. She had a tumor. Parvin saw it, Miller saw it, Thomas saw it. All declared it to be a fibroid. In the fall she

gave birth to a child. Four years ago I saw a case of an enormous tumor,—pronounced by myself, Parvin, Samuel Gross, and other experienced men to be a fibroid. Time went on: she got some muriate of ammonia and ergotin, and one night, about a year ago, she was seized with all the symptoms of peritonitis, collapse, and shock, and the gentleman called to her tapped her as the only likelihood of affording her relief. He drew off an enormous quantity of fluid. It refilled. I saw it, and operated upon her; and, although the operation was easy as it was possible to do, the woman died. Such cases show simply that the wisest and most experienced men make mistakes."

The most interesting feature of the meeting was the discussion of the treatment of typhoid fever, brought about by a paper on that subject by Dr. Pinckney Thompson, of Henderson. He advocated—1st, that the early treatment of a suspicious case should be that indicated for malarial fever. Eliminating in this way malarial fever, the remainder of the treatment resolves itself into controlling the temperature,—for which he preferred the sponge-bath to everything else,—and supporting the heart in the later stages by means of the systematic employment of alcohol. For the bowel complication, belladonna holds a high place in his estimation, especially in connection with phosphoric acid as an antipyretic.

Dr. William Bailey, of Louisville, thought no man ought to reject quinine as an antipyretic until he had used it in antipyretic doses.

Dr. J. A. Larrabee, of Louisville, thought that while salicylic acid and quinia were undoubtedly powerful agents in reducing temperature, they reduced it at the expense of the circulatory system.

Dr. D. W. Yandell, of Louisville, contrasted the treatment of twenty-four years ago with that prevailing at the present time, bringing out his objections to the use of quinine in this disease.

While he recognizes the value of keeping down the temperature, and values the wet pack or warm bath for that purpose, he deplores the tendency to over-feed typhoid patient. He has made it a rule, in the last five cases he has treated, to be governed in his administration of food by the desires of the patient. He has found the diarrhoea to be less formidable, and has noticed no tendency worthy of mention to exhaustion from this want of support. One of his cases passed seventeen days without food, taking in that time only two or three glasses of water. On the twelfth day a slight diarrhoea was manifest, for which the patient got some chalk-mixture, which proved to be sufficient to control the bowels. When convalescence began, his recovery was more rapid than usual. He thought quinine served a good purpose in

convalescence when the elevations of temperature begin to occur periodically.

Dr. A. W. Johnstone, of Danville, read a very interesting paper on "Bigelow's Lithoplaxy." He compared it with lithotomy and lithotripsy, showing the superiority of the former. He exhibited Bigelow's apparatus for drawing the fragments out of the distended bladder, and demonstrated its action.

Dr. Dudley S. Reynolds, of Louisville, in speaking of "Inflammation of the Iris," emphasized the importance of local treatment to dilate the pupil in all the various forms. This is the first, the immediate, the important thing to do. Then institute such measures of treatment as the constitutional condition may demand,—salicylate of soda if rheumatism be present, iodide of potassium if syphilis. If it be due to traumatism, be guided by the rules which govern the treatment of all wounds. The agent which he recommends for producing prompt dilatation, and which he regards as greatly superior to atropia, is the hydrobromate of homatropine.*

Dr. W. M. Fuqua, of Henderson, read an exhaustive paper on "Civilization and Sanitation." He maintained that the origin of the great majority of diseases is centric, not eccentric, and that the modern theory of sanitary science is unsound.

Dr. T. D. Finck, of Louisville, read a paper on "Phlyctenular Keratitis." He regards the herpes which appear at the cornea-conjunctival junction as due to the deliquescence of lymphatics in this situation securely bound down to the sclerotic, whereas they lie in a closely-bound conjunctiva in other parts of the eye. This deliquescence is brought about by hyperdistention and consequent rupture of the lymphatics, which, in turn, is due to obstruction of the lymph-channels from hyperlymphosis. Out of this he evolves the indication of treatment,—defibrinization of blood by syrupus ferri iodidi, and minute doses of calomel.

Dr. William Cheatham, of Louisville, advocates delay in the enucleation of a diseased eye when it is causing sympathetic ophthalmia, saying that he has succeeded in curing several cases without enucleation.

Dr. J. M. Mathews, of Louisville, made some remarks upon the subject of "Operations upon Hemorrhoids during Inflammation." He now departs from the time-honored principle of not operating upon inflamed structures, and never waits for the inflammation of a pile to be subdued by local treatment before operating upon it. He cited several cases as illustrative of the wisdom of the practice.

It was a matter of considerable solicitude among some of the members of the Society to discover whether it was proper, in operating upon a man, to take his whole pile or

* This paper appears in full in this issue. (See p. 705.)

divide it with him [diagram furnished on application]. Dr. Mathews replied that it was right and proper to take all the pile in sight.

Dr. Pinckney Thompson, of Henderson, was elected President for the ensuing year.

The next meeting will be held at Crab Orchard Springs.

Resolutions of respect for the late Prof. Samuel D. Gross, first President of the Society twenty-nine years ago, were adopted.

A committee to consider appropriate legislation, and to urge its passage by the Legislature, for the suppression of quackery, was appointed.

The justly-celebrated hospitality of the well-bred Kentuckian suffered no discredit at the hands of the local profession and the people of Bowling Green.

ALLEN KELCH, M.D.

PROCEEDINGS OF SOCIETIES.

AMERICAN NEUROLOGICAL ASSOCIATION.

THE Tenth Annual Meeting was held at the hall of the New York Academy of Medicine, June 18, 19, and 20, 1884.

In the absence of the retiring President, Dr. EDDES, the Vice-President, Dr. MORTON, called the Society to order, and said that, looking over the year's work, we could justly say that neurology, as represented by this Association, had not taken a backward step. He then made a brief retrospect of the valuable work done by the specialists in this department. As an evidence of increasing interest, he presented a recent journal of large size, devoted to the subject of neurology, published in the Russian language, and then introduced the President-elect, Dr. ISAAC OTT, of Easton, Pennsylvania.

Dr. OTT briefly thanked the Society for the honor conferred upon him, and then submitted for their consideration the special subject to which he desired to invite their attention:

THE PATHS OF THE VARIOUS FIBRES IN THE SPINAL CORD.

It is about seventy years since Charles Bell announced that the anterior roots of the spinal cord were motor and the posterior were sensory. The physiology of the cord as taught to-day was mainly due to perfection in the *technique*,—that is, the use of immovable directing knives and the subsequent microscopic examination of the hardened cord,—points which had been neglected by Schiff and Brown-Séquard. After numerous experiments, Longuet arrived at the conclu-

sion, in 1840, that the anterior columns were motor and the posterior sensory. Brown-Séquard also, after numerous experiments, believed that the transmission of sensory impressions in the cord took place chiefly through the gray matter and partly through the anterior columns; that the voluntary impressions in the upper part of the cervical cord were in the lateral columns and in the gray matter between them and the anterior columns; that no tactile sensations ascended the posterior columns to the brain. He made at least seven different kinds of sensation conveyed upward. But he had since somewhat modified these views. Prof. Schiff thought that the posterior columns conducted tactile impressions, that the gray matter conducted in all directions afferent impulses which give rise to affections of general sensibility and such efferent impulses as were paths of reflex action. Dr. Ott mentioned these facts to show that they were greatly in need of correction.

The author then referred to the experiments of Ludwig, Fick, his own, and others, and arrived at the conclusion that the lateral columns conducted sensation and motion; the gray matter did not directly participate; the anterior columns conducted voluntary motion; tactile sensations also passed up the posterior and lateral columns; the different nerve-tracts crossed one another.

The Secretary and Treasurer and Council read their reports.

The following officers were then elected:

President.—Burt G. Wilder, of Ithaca, New York.

Vice-President.—Leonard Weber, of New York.

Secretary and Treasurer.—Graeme M. Hammond, of New York.

Council.—W. R. Birdsall and W. J. Morton.

Dr. B. G. WILDER then made a communication and gave an exhibition of preparations illustrating (a) the existence and circumscription of the portæ (foramina Monroi) in the adult human brain; (b) the presence of the crista fornicis in foetal and new-born human brains; (c) two additional cases of absence of the callosum in the domestic cat; (d) the covering of the cerebellum by the cerebrum in a young chimpanzee whose brain was hardened within the skull.

Dr. R. W. AMIDON presented a human brain in which there was absence of the callosum, and said he would read the history later.

Dr. SPITZKA said it was an error to suppose that a preponderance of the cerebrum over the cerebellum was, *per se*, an indication of high development. On the contrary, the cerebellum, being situated midway, so to speak, of fibres to be finally transported to the cerebrum, forming a depot for the higher centre, it stood to reason that, if any relation

existed between them, both must progress evenly.

Dr. WILDER said his object in presenting the specimen was to illustrate the importance of making anatomical preparations in a manner not to misrepresent the facts, and thus avoid false conclusions and unnecessary discussion.

The Society adjourned, and met again at 8.30 P.M.

EVENING SESSION.

The report of the Committee on the Hammond Prize Essay was read. But one essay had been presented, of which, in a lengthy report, the committee spoke in most commendatory terms, but decided not to give the award.

The members present being of the opinion that the conclusion arrived at by the committee was not in harmony with the body of the report, it was, on motion, referred back for further consideration.

Dr. A. D. ROCKWELL read a paper entitled

A CASE OF TONIC SPASM OF THE DIAPHRAGM (?).

He presented the case because it was unique, and because of its obscure pathology. Mrs. X., aged 35, mother of four children, began first to complain of paroxysms of distress some twelve years ago. Their recurrence was marked by uncertain and varying intervals. Before January, 1884, they seldom occurred more than once a year, and sometimes there was an interval of two or three years between the attacks. Since then the attacks had become quite frequent, sometimes as often as twice a day. The patient was awakened from sleep by a vague feeling of pressure and distress at the lower end of the sternum and over the epigastrium, extending to the back. It was as if the front and back were being pressed or pulled together. The patient believes this can be due to no other cause than a spasmodic contraction. The recumbent position was impossible; the patient moved about the room in a bent posture, or leaned forward against a support, making short and gasping inspirations. The countenance was pallid, and agony was depicted on every feature until the condition was relieved by an anæsthetic. The pulse became weaker and somewhat frequent, but was not irregular. The attacks lasted from a half to three-quarters of an hour. The patient quickly rallied after the attack, but a bruised and sore feeling remained many hours later. Many efforts had been made for her relief. Electricity had been tried in all its forms, but treatment had been without avail until a month ago, when the actual cautery was used, and there had been no attack since, and the general health and strength had shown steady

improvement. Gall-stone had been excluded as the cause. The heart had been pronounced sound, and no other organic disease had been detected. The patient had suffered at various times from muscular rheumatism, but rheumatism of the diaphragm would not account for the symptoms described.

Dr. Rockwell believed that the symptoms were due to spasmodic contraction of the diaphragm, notwithstanding the absence of certain objective symptoms, such as expansion and immobility of the lower half of the chest, projection of the epigastrium, and closure of the œsophagus.

The lecturer also referred to a case of supposed organic stricture of the œsophagus relieved by the cautery to the spine.

Dr. DANA asked whether angina pectoris had been excluded, and said that it seemed impossible for the diaphragm to be tonically contracted without there being protrusion or tension of the abdominal walls. If there were tonic contraction of the diaphragm, the œsophagus would be closed, so that swallowing would be impossible.

Dr. BIRDSALL asked whether hysteria and hepatic calculi could be excluded.

REMARKS ON MICROSCOPIC ENCEPHALIC NOMENCLATURE.

Dr. B. G. WILDER read a paper upon this subject. Like former studies of the subject by the same anatomist, the general purpose of this paper was to facilitate true advancement and discrimination of our knowledge of the coarse anatomy of the brain. He presented the difficulties of the ponderous terms now employed. He regarded the adoption of technical brief monomial terms, most of which might be had by subjecting those in common use to abbreviation, translation, and combination, as an advantage. He also urged that more frequent and systematic use be made of the various methods of classifying the encephalic parts, and thus their names, in accordance with true segmentation of the organ, its formation by cavities and pareties, the division of the latter into commissures, etc., and especially the recognition of certain parts, as hypertrophied, atrophied, and marginal (tænia, fimbria, crista, etc.). Specific recommendations were—(1) the substitution of mesen, proën, etc., as abridgments (not abbreviations) of mesencephalon, proëncephalon, and their segmental names; (2) the designation of the ventricles by the Greek κοιλία (coelia) in composition with the segmental prefixes, which would require mesocoelia (mesocele), etc. In this connection, attention was called to the substantial coincidence of Prof. Wilder's series of coelian names (first published in March, 1881) with the names more recently proposed by Prof. T. Jeffery Parker.

Remarks upon the paper were postponed until the next afternoon.

THURSDAY (SECOND DAY).—AFTERNOON SESSION.

The Society was called to order at 2.30 P.M. by the President.

Dr. W. A. HAMMOND stated, with regard to the prize essay bearing his name, which had been brought up at the previous session, that it certainly had not been his intention to offer the prize for any essay upon the functions of the optic thalamus, especially as based upon experiments on animals, but rather for a valuable and original contribution upon the function of the thalamus in man.

Discussion of Dr. Wilder's paper on the subject of encephalic nomenclature was then taken up, and was participated in by Drs. Dana, Birdsall, and Wilder.

Dr. WILDER presented the following resolutions, which, on motion, were ordered to be acted on upon Friday:

"*Resolved*, That, in the opinion of this Association, the advancement and dissemination of accurate knowledge of a true macroscopic anatomy of the brain will be facilitated by substituting for many of the polynomial terms, technical and vernacular, now in use, technical names which are brief and consist each of a single word.

"*Resolved*, That we recognize the advantages of using such monomial compound terms as antiplexus, diatela, meso-coelia, hemi-septum, præ-commissura, medipedunculus, portcornu, and cognate words, proposed by Prof. B. G. Wilder, and see no serious objection thereto.

"*Resolved*, That there be appointed by the chair a Committee of Macroscopic Encephalic Nomenclature, with instruction to report at the next meeting a list of such terms as, in their judgment, may properly be recommended for use."

CAN LOCOMOTOR ATAXIA BE CURED?

Dr. G. M. HAMMOND read a paper with this title. A few years ago, when a member of the medical profession announced that he had cured a case of locomotor ataxia, his statement was not received with a great amount of interest. Belief in his views was not entertained for a moment. It was absurd even to talk about curing ataxia, and the physician was regarded as having made an incorrect diagnosis, or there was an intimation that the disease was cured at a very opportune moment. The pathological conditions found in the spinal cord of persons who had died while suffering from ataxia seemed to warrant the view held by the majority of physicians, that a cure of this affection, and of all similar ones, such as sclerosis of different parts of the cord and brain, was an impossibility. But, as time passed, there were published in the journals reports of cases cured by men in the profession, many of them of such undoubted learning and high reputation that we could

not afford to overlook them. The question then arose, were these true cases of ataxia, or was there some other morbid condition of the spinal cord which, when present, gave rise to symptoms similar in every respect to those resulting from sclerosis of the posterior columns? Dr. Hammond had been able to collect a few cases of undoubted cure of what was supposed to be locomotor ataxia. Different methods of treatment had been employed.

Case I.—Dr. Hammond was fortunately able to present the patient again whom he had presented to the Society at its previous meeting. He then exhibited him as a case of locomotor ataxia cured, and he was able to say that the cure had so far stood the test of time. His history was as follows. Ten years ago the man came under the care of Dr. James Anderson, of this city, for a lesion of the glans penis. Dr. Anderson was unable to say at that date whether it was a chancre or a chancroid. No secondary symptoms were ever apparent. He had been a drinker for several years, seldom getting on a spree or becoming intoxicated, but taking many drinks every day. In the winter of 1882 he went on a spree which culminated in an attack of delirium tremens. Following this attack the permanent symptoms of ataxia appeared. Though for the previous six months he had complained of sharp itching pains in the legs and slight difficulty in walking, he was now unable to stand without a support. His walk, when assisted, was characteristic of ataxia. There was loss of the tendon reflexes, difficulty in retaining the urine, anæsthesia of the lower limbs. The arms were somewhat affected, and there was partial loss of sight. Dr. Anderson prescribed iodide of potassium and bichloride of mercury, and referred him to Dr. Hammond for further treatment. Dr. Hammond applied the actual cautery several times to the spine, together with dry cups, ether spray, static and galvanic electricity. During this time the patient began to improve, and when he was exhibited before the Society a year ago he was apparently perfectly well, and walked correctly. He could stand with his eyes closed, and jump on and off the car while in motion. The tendon reflexes had returned. The patient had had no treatment since. He drank no wine or liquor in any form; he was stouter and seemed to be in better condition than he had been at any time for years.

Case II.—This case was reported by Desplat, of Lisle. The patient was a man, 54 years of age, who had contracted syphilis twenty years previously. For five years he had shown symptoms of locomotor ataxia; such as plantar anæsthesia, loss of the idea of the exact position of the limbs, partial anæsthesia of the upper limbs, absence of the tendon reflex, and incoördination. He was treated with Gibert's syrup and mercurial fric-

tion. In five days it was apparent that there was an amelioration of the symptoms, and in five months the cure was complete.

Case III.—This was the case of a man who consulted Dr. W. A. Hammond two years ago. All the symptoms of locomotor ataxia were present. The patient was unable to stand with the eyes closed. The tendon reflex was absent. He was unable to hold his urine for any length of time, having to pass it as often as forty-five times a day. Anæsthesia was present, and the passage of sensory impression through the cord was considerably prolonged. A specific history was admitted. Dr. Hammond treated him with the iodide of potassium and bichloride of mercury, alternated occasionally with nitrate of silver. The actual cautery was applied to the spine, together with dry cups; the ether spray and galvanism were employed; improvement was gradual, but steady; the anæsthesia disappeared; he began to walk better; the urinary symptoms improved. The tendon reflexes did not return. In a letter dated May last the patient stated that he had not enjoyed as good health for years; he was completely cured of the locomotor ataxia; he had no difficulty in walking or standing in any position, and he felt equal to any physical exertion. So far as his bladder was concerned, he hardly knew that he had one.

Case IV. was reported by Frederick Schultze. The patient was first seen by Erb in 1871. He was then 43 years of age, and had been suffering for two or three years with lancinating pains in the lower extremities. For a year he had been unsteady on his legs, and had suffered from inability to retain his urine. These symptoms gradually increased in severity; the patient was unable to walk in the dark; was unable to retain urine at night. Under the use of nitrate of silver, the difficulty in retaining the urine was somewhat improved, and he became better able to stand with the eyes closed. In April, 1871, the galvanic current was used. He then improved in his powers of locomotion until the eyes could hardly perceive any abnormality in his gait. All of the symptoms gradually disappeared, until, in 1873, he was considered perfectly well. He remained well up to the time of his death, which occurred suddenly during an attack of acute intoxication. Just previous to his death, Dr. Schultze saw him, and noted that the gait was perfectly normal, sensibility intact, the patellar tendon reflexes normal. There was slight anuresis both night and day. Nine hours after death an autopsy was held, at which the spinal cord was found to be small and soft. There was diffuse degeneration of the posterior columns in the lumbar region, and degeneration of the outer division of the posterior columns of the dorsal region, and slight degeneration of the columns of Goll.

Dr. Hammond thought this a most remarkable case. How it was possible for sclerosis

of the posterior columns to exist without the manifestation of any symptoms of ataxia except of slight anuresis, could be accounted for only in one way. In such cases we are forced to conclude that some other condition of the spinal cord coexisting with, or occurring distinctly from, sclerosis, was capable of producing the majority of the symptoms of ataxia, and that this morbid state, under certain conditions, was capable of being removed by appropriate treatment. In support of this view, Dr. Hammond cited three more cases.

Case V.—Desnos gave the history of a characteristic case of ataxia, and at the autopsy it was found that the cord was very intensely congested, but not the slightest evidence of sclerosis of the posterior columns or any part of the cord could be discovered.

Case VI.—The same authority referred to the case of a man, 24 years of age, who had contracted syphilis several years before. He was also exhausted by sexual excess and literary pursuits. Desnos made a diagnosis of ataxia, and prescribed protiodide of mercury, iodide of potassium, and bromide of potassium. At the end of five weeks the patient showed considerable improvement, and soon afterwards he was regarded as completely cured. Desnos regarded this as a case of congestion of the spinal cord.

Case VII.—This case was reported by Dr. Lyman, of Chicago. The patient consulted him in 1879, suffering from lightning-like pains in the legs, anæsthesia, hyperæsthesia, and analgesic patches on both limbs. The tendon reflex was absent. The ataxic gait was marked. There was loss of co-ordination in the upper extremities, inequality of the pupils, and choked disk. Treatment failed to give relief, until, at the advice of some friends, the patient used Junod's boot. From this time he began to improve, and finally was nearly completely cured, being able to walk well and rapidly without a cane, and the bladder and other symptoms disappearing.

From a study of these cases Dr. Hammond drew the following conclusions:

First, that sclerosis of the posterior columns of the cord might exist without any prominent symptoms.

Second, that congestion of the posterior columns might exist and give rise to most if not all of the symptoms of ataxia.

Third, that it was impossible, during life, to make a differential diagnosis between posterior spinal sclerosis and posterior spinal congestion.

Fourth, that congestion of the posterior columns of the cord was amenable to treatment.

Fifth, there was no evidence that sclerosis, when once existing in the spinal cord, had ever been removed.

Sixth, those cases of so-called locomotor ataxia which had been cured were simply

cases of congestion of the spinal cord, more profound in the posterior columns.

Dr. W. A. HAMMOND thought the view advanced by the author, that the condition was one of congestion, and not of true sclerosis of the posterior columns, was correct. He referred to a case which he had recently seen of marked symptoms of locomotor ataxia. There was presumable syphilis, but iodide of potassium and bichloride of mercury produced no effects. After the use of opium, to obtain sleep, and nitrate of silver for two weeks, nearly or quite all of the symptoms disappeared. Dr. Hammond thought there had been congestion affecting the central part of the cord more than other parts.

Dr. BARTHOLOW, of Philadelphia, said he agreed with the author of the paper that cases of locomotor ataxia could be cured; but what kind of cases? He mentioned a case which was cured by the iodide of potassium, but it was a case of mercurial ataxia. He had no doubt that there were many cases of locomotor ataxia cured which were really cases of mercurial poisoning. The symptoms might be perfectly typical of locomotor ataxia. There was no doubt that there were cases of chronic syphilis producing ataxic symptoms which might be cured. We ought to make a distinction between these cases due to deposit of gummata or metallic poisoning, and those due to true sclerosis. In this limited sense he believed locomotor ataxia could be cured. Furthermore, he thought that under the use of proper remedies, taken in time, certain cases of true locomotor ataxia might be arrested *in statu quo*. But there was a great difference between arresting the disease and restoring the cord to its normal condition.

The paper was further discussed by Drs. CORNING, G. M. HAMMOND, WEBBER, ROCKWELL, MASSEY, MILLS, BANNISTER, and BIRDSALL. Dr. Webber doubted whether there could be hyperæmia or congestion lasting weeks and months, producing ataxic symptoms. The other gentlemen did not believe that true locomotor ataxia could be cured, and thought that the symptoms in cases which recovered were due to some other condition.

Dr. MILLS had seen many cases of locomotor ataxia, and also a number of pseudo-ataxia, and he had never seen a case of the former kind cured, while he had seen several of the latter kind recover. Cases of distinct syphilitic ataxia might be cured, as suggested by Dr. Bartholow, by anti-syphilitic treatment. He believed that there was a form of meningomyelitis, a low grade of inflammation involving the membrane and the extreme periphery of the cord, which might give rise to symptoms of typical advanced sclerosis of the posterior columns, and these cases sometimes got well. Again, he believed that sometimes cases of neuritis became cases of sclerosis. There were forms of general neuralgia which were sometimes mistaken for locomotor ataxia, and

these cases were cured. It was well known, of course, that there was a form of hysterical locomotor ataxia, and sometimes a combination of having been exposed to syphilis on the part of the patient and a certain condition of lowered nerve-tone which gave rise to a disease which was supposed to be syphilitic, but which was hysterical in character, and this condition was cured in the process of time. True typical hysterical locomotor ataxia was, of course, curable. In these cases there was not likely to be absence of the patellar reflexes. His own impression was that we could not say that we could have limited congestion of certain columnar or other regions of the cord. He thought it more probable that there was real inflammation giving rise to the ataxic symptoms.

Dr. BIRDSALL referred to some cases in which there was an apparent cure of the locomotor ataxia, but some months afterwards symptoms took place which showed that the disease was progressing.

MULTIPLE NEURITIS.

Dr. S. G. WEBBER, of Boston, read this paper, in which he briefly reviewed the literature of the subject, and narrated the histories of four cases in considerable detail, and briefly referred to eighteen cases which had come under observation comparatively recently in the hospitals at Boston. It was only within a few years that a more general inflammation of the nerves had been recognized. Up to this time he had found recorded six cases with autopsies and twelve cases without. Speaking of the eighteen cases which had entered the hospitals at Boston, fourteen only came under his own observation. The youngest patient was 9 years old. One was 4 years old; but there was doubt as to whether the condition were one of multiple neuritis or of infantile paralysis. The oldest patient was 51 years. More than half were between 20 and 30 years of age. There was an interval of one week to four months after the beginning of the symptoms before the patients entered the hospital. The stay varied from two days to six months. Only a few of the patients were able, after three or four months, to go back to their occupation. In most of the cases no cause for the disease could be assigned. In five the patients attributed it to taking cold. Nine were females. There were three adults. Disturbance of sensation was one of the most constant and persistent symptoms. Tingling or a sleepy feeling might precede the more severe pain, but within a comparatively short time it became severe. It might be confined to one nerve-district or exist in several. Sometimes the patient could mark the course of the nerve by the pain. The character of the pain was aching, boring, shooting, burning,—varying in different cases. With the pain there was great hyperæsthesia of the skin and tender-

ness of the muscles, pressure causing excessive pain. Pressure over the nerve-trunks gave more acute pain than when applied to muscles. When the hyperæsthesia subsided sufficiently, there would be found diminution of tactile and other sensations. Special senses had only rarely been affected. Exceptionally the pain and tenderness had been very slight, or wanting. Motion was early disturbed. At first there was stiffness, due, in part, to pain; later, paralysis more or less complete. The muscles were not affected equally, but paralysis was distributed according to the nerves most affected. Within a comparatively short time the limbs became contracted, sometimes the contraction becoming extreme. The heels might be drawn up to the thighs, and the knees nearly against the chest. Electrical reaction of the nerves and muscles showed changes; the various tendon reflexes—both deep and superficial—were generally absent.

The temperature and pulse were elevated in the earlier stages of the disease, and in two fatal cases throughout the observations. Later the temperature usually dropped to nearly or quite normal. The pulse-rate continued rather high. In a few cases mild delirium was noticed, most marked at night. One or two women showed something of a hysterical disposition. In some of the patients there was general wasting of the tissues and loss of flesh. In some there was œdema of the limbs and of the face. Excessive sweating was observed in some. One patient had an abscess in the parotid region during convalescence. In the fatal cases the respiratory muscles became paralyzed, the voice was changed, deglutition was affected; the patient died, perhaps, from entrance of food into the air-passages.

The symptoms having been pointed out, it would not be very difficult to make the diagnosis in marked cases. It might be differentiated from anterior poliomyelitis by the pain, hyperæsthesia, tenderness over nerve-trunks, diminution of sensation, high pulse-rate, more gradual onset from acute form of poliomyelitis. It was less common for the latter to invade all four of the extremities. Progressive muscular atrophy did not give the sensory disturbances or the electrical changes. In lead-paralysis the sensory disturbances were not so marked. It might be mistaken for acute rheumatic fever, for in the case of three or four of the patients who came to the hospital there had been a diagnosis of rheumatism. Spinal meningitis might be recognized by the greater amount of pain in the back, which was increased by passive motion, etc. One case had been reported in which there had been a diagnosis of locomotor ataxia. Dr. Webber referred briefly to the fact that it had been claimed as of bacterial origin in Japan. He gave the results of the autopsy in one or two cases, referred to the fact that different opinions had been enter-

tained with regard to whether the disease were of peripheral or central origin, and stated, with regard to treatment, that salicylic acid seemed to cut short pain in some cases; morphine was necessary to relieve pain in many; the application of a cloth soaked in a solution of carbolic acid was a comfort; blisters over the course of nerves were of benefit in relieving persistent hyperæsthesia. It was well to try to avoid contractions by gentle extension. Massage, extension, and electricity were to be used a long time in overcoming contraction and promoting a return of power.

The paper was discussed by Dr. ROCKWELL, who inquired whether the actual cautery had been employed, and referred to one case in which he had found it, when applied to all the hyperæsthetic spots on the body, of decided benefit. He could not say whether it had any effect upon the general course of the disease.

The paper was further discussed by Dr. BIRDSALL, who regarded it as a valuable contribution to this subject.

Dr. R. W. AMIDON then presented a brain from a case of word-deafness and blindness without paralysis.

There was an extensive lesion involving the cortical substance at the angular gyrus, extending posteriorly and superiorly.

Dr. ROBERTS BARTHOLOW then read a paper on

CHLORIDE OF GOLD AND SODIUM IN SOME NERVOUS AFFECTIONS—A PRELIMINARY NOTE.

In this communication the author first referred to the use of gold as a medicinal agent by the ancients and by some physicians of more recent times. There were three headings under which it was convenient to group the therapeutic powers of gold: its so-called alterative action, its action upon the nervous system, and its action upon the genito-urinary system.

He had always preferred the double chloride of gold and sodium since he had learned how slightly diffusible was the chloride. The double salt was readily diffusible. He had had no experience with the oxide of gold. The usual dose of the golden sodium chloride was one-twentieth of a grain. In this quantity, administered two or three times a day, it appeared to have, as a primary action, the power to promote constructive metamorphosis, to improve the condition of the blood, and to increase tissue-strength. Kept up for a time, the tissue-changes became more rapid, waste occurred in excess of repair. The tissues which yielded most readily were connective tissue and pathological formations. Hence the utility of the remedy in sclerosis, whether nervous, hepatic, or renal. Especially in posterior spinal sclerosis and chronic interstitial nephritis had he found the salt very efficacious.

He was far from believing, however, that lost parts could be restored. When used in locomotor ataxia early and persistently, it had seemed to him to arrest the disease in favorable cases. In three cases it seemed to him that the disease had not only been arrested, but had been improved. Thus far no gastric or intestinal disturbance had followed the use of this remedy. Favorable results had attended its use in certain cases of kidney disease. There was a form of hypochondriasis coincident with changes in the cerebral vessels, and it might be depending upon those changes, in which the gold and sodium chloride was effective. In time the uneasiness in the head, the vertiginous and other abnormal sensations, subsided, and the mental depression cleared up. It seemed to him that the ancient opinion that gold was a cordial in cases of melancholia was supported by modern experience. It was also of use in certain nervous conditions characterized by spasm. One physician told him that he employed no other remedy in cases of pseudo-croup and laryngismus. In various cognate affections it would be found useful. The same power rendered gold of great value in certain urino-genital affections. He had referred to chronic interstitial nephritis. He could mention many cases of albuminuria in which the curative effects of this remedy had been conspicuous.

He presented these notes in advance of a more elaborate treatment of the subject, to awaken more general interest in the use of this agent. Wider and more varied experience was necessary to fix its position.

The paper was discussed by Drs. DANA and BANNISTER.

FRIDAY (THIRD DAY).—AFTERNOON SESSION.

The PRESIDENT in the Chair.

The Society took up the consideration of the resolutions offered by Dr. Wilder the previous day. The first resolution, relating to the appointment of a committee, was adopted, and the other two were referred to that committee. The President appointed as such committee Drs. Wilder, Spitzka, McBride, Gray, and Birdsall.

Dr. ISAAC OTT read a paper on

THE EFFECTS OF INJURIES OF THE SPINAL CORD UPON THE EXCRETION OF CARBONIC ANHYDRIDE.

The effect of injuries of the spinal cord upon the excretion of carbonic acid had been, so far as he knew, little, if at all, noted. The action of complete division of the cord upon the pulmonary exhalation had been observed in the course of calorimetric experiments by others. That the gray matter and white matter of the cord had different functions was axiomatic, and it was an important question what relation they sustained to the excretion of carbonic acid. This subject also had rela-

tions to the pathology of the thermo-inhibitory fibres of the spinal cord. The experiments which he had made were upon rabbits. He described the apparatus in use for this purpose, and said the animals were kept in a chamber of a temperature of 100° F. If the cord of the rabbit be cut about the junction of the dorsal and lumbar regions, the temperature would fall, unless the animal were placed in a temperature which approached that of the bodily temperature, in which case it would rise. This rise of temperature was due to division of the cord, and not to external heat. Thus, if the uninjured animal were placed in the warm chamber for some hours, no rise of bodily temperature took place. But when the cord was divided and the animal replaced in the warm chamber the temperature rose. If the cord were completely exposed, but not cut, the temperature would rise only a few tenths of a degree. If on the following day the same cord were divided, the temperature, whilst at first falling, would rise several degrees. It made no difference, in the majority of the cases, whether the white or the gray matter were divided. No rise of temperature was observed after an hour, except in two cases; in most cases it then fell below normal. Prof. H. C. Wood had made six calorimetric experiments, during which the cord was completely divided. In his six cases carbonic acid was increased, except in two, and in one of these much blood was lost.

The paper was discussed by Drs. BARTHOLOW, W. A. HAMMOND, and the author.

A CONTRIBUTION TO THE STUDY OF HYSTERIA AS BEARING ON THE QUESTION OF OÖPHORECTOMY.

Dr. G. L. WALTON, of Boston, read a paper with this title. The question of operation should be limited to cases in which the symptoms were secondary to pelvic disturbance,—cellulitis, cystic degeneration of the ovaries,—as distinguished from the far more numerous cases in which the local symptoms were secondary to constitutional disorder. We might have to include certain cases in which no organic disease was suspected, but should be extremely conservative in this respect.

We are ignorant of the exact relation of hysteria to ovarian disease. The theory was suggested that the loss of function in the cortical cerebral cells in, *e.g.*, hemi-anæsthesia, was due to spasm of the cortical blood-vessels analogous to that supposed to exist in some forms of migraine. In favor of this theory were mentioned the rapidity of onset and disappearance of symptoms, the regularity of the "transfer," and the fact that other vasomotor irregularities were common in hysterical patients. In support of the theory, was mentioned the case previously published by the reader, in which left-sided spastic migraine coexisted with right-sided hemi-anæsthesia and with left-sided intermittent retinal ischæ-

mia, the blood-vessels of the right eye remaining unaltered. If this theory were correct, the starting-point for the vascular spasm lay probably in irritation of the sympathetic nerves of the ovaries in the cases under consideration. Theoretical considerations were of minor importance as compared with the practical question, was hysteria ever secondary to pelvic disease, and could it ever be relieved by removal of the ovaries? Both parts of the question could be answered probably in the affirmative in view of reported cases. As an illustrative case of the rôle played by hysteria as an additional indication for operation, was reported the case of a patient operated upon by Dr. B. Malden, in which hemi-anæsthesia and convulsive attacks, added to extreme debility and severe pain during and between the catamenial periods, furnished the ground for operating after failure of other treatment. The ovaries were removed without the tubes. Relief of all symptoms followed, including the hemi-anæsthesia and the hysterical convulsions, and the general condition of the patient was much improved. The improvement had been continuous up to the present time, over four months after the operation.

Dr. SPITZKA thought we were far from being able to adopt even the limited and moderate views which Dr. Walton had brought before us. Cases recovered sometimes just as quickly without any operation as in the case reported. Again, we would find even extreme disease of the ovaries without any of the symptoms spoken of pertaining to hysteria. As to the theory regarding the affection of the vaso-motor system, it was simply a theory, with no more weight than others which might be advanced. We knew nothing about it. He referred to a case of hysteria in which the symptoms could be referable to the disease of the ovaries if these organs were ever at fault, but not a particle of relief was afforded by oöphorectomy. The patient died five days after the operation.

Dr. C. K. MILLS said that his own view with regard to the operation was that certainly in the vast majority of cases in which it had been performed the trouble might have been relieved without the performance of the operation. We all knew that hystero-epilepsy could be relieved by a much less severe measure than the one proposed. He had seen cases in which the operation had failed to relieve the cerebral condition. He believed that hysteria was very seldom dependent upon disease of the ovaries or uterus.

Dr. PUTNAM, of Boston, did not see why in some appropriate cases, in which all other means failed to give relief, the ovaries should not be removed as the probable source of irritation. We knew that the removal of other parts, the source of irritation, gave relief.

Dr. A. D. ROCKWELL had often found the hysterical or neuralgic symptoms removed

while the ovarian disease remained. Undoubtedly, great care should be exercised in selecting cases for removal of the ovaries. He mentioned the case of a woman upon whom eminent gynæcologist's urged removal of the ovaries. It was refused, and she was to-day free of any hysterical symptoms.

Dr. PUTNAM JACOBI, by invitation, related three cases, and said that, as had already been stated by previous speakers, there was always a question with regard to the theory as to whether the sensory symptoms were projected from the cerebral cortex or whether we had to do with a demonstrable source of local irritation, causing, by reflex action, disturbance of the cerebral cortex. She asked if the history did not, in many cases, point to a condition similar to the aura in epilepsy. If the patient's attention could be called away from her troubles for a time, it was no more than could be done in the pain of cancer or other wound.

The discussion was closed by Dr. WALTON, who thought no one could be with reason more conservative than he had expressed himself in his paper.

TYPICAL HYSTERICAL SYMPTOMS IN MEN DUE TO INJURY, AND THEIR MEDICO-LEGAL SIGNIFICANCE.

Dr. JAMES J. PUTNAM, of Boston, read the paper, and said the important point was that, more commonly than had been thought, there were symptoms of typical hemi-anæsthesia following injuries of the kind referred to such as the patient could not have imitated, even though all the other symptoms of hysteria had been present or disappeared. Three cases of this kind were referred to, all occurring in men, and the fact was commented upon as affording valuable evidence of disease in cases which might have been supposed to be cases of simulation. Similar cases had been reported by German observers.

Dr. DANA could appreciate the difficulty Dr. Putnam had mentioned as to distinguishing between real and simulated symptoms of injury. He mentioned two cases, in one of which he thought the symptoms were largely due to the influence which the hope of obtaining a large reward made upon the patient's mind. This subject was largely in a state of confusion. He thought that cases of railroad-injury might be divided into two grand divisions,—one in which there was serious injury, contusion, fracture, etc., from which the patient suffered immediately after the accident, and finally might get well or die; the other class might be subdivided into two divisions, in one of which the symptoms developed slowly, and finally presented a picture of meningo-myelitis of the cord resulting from concussion, and in the other there was a marked hysterical element. An important point in diagnosis might exist in the electrical resistance of the two limbs.

Dr. PUTNAM closed the discussion. He referred to the necessity for testing all of the senses: sometimes one and sometimes another might be found to be affected. In one of his cases there was atrophy of the limb due to inaction. This would not have taken place had inability of motion been only simulated.

Dr. SARAH J. MCNUTT, of New York, presented specimens and read the history of a case illustrating sclerosis of the greater part of the motor cortical zone of both hemispheres, with secondary degeneration of the paraminal tracts. The girl had never been well, had shown symptoms pertaining to the nervous system, and it was believed by the author that the lesions found their origin in injury during instrumental delivery.

EVENING SESSION.

Dr. W. R. BIRDSALL in the chair.

After the report of the Council, Dr. W. R. BIRDSALL read an abstract of a paper on

OPHTHALMOPLEGIA EXTERNA PROGRESSIVA.

The paper began with a report of two cases of slowly progressive paresis of all the external muscles of both eyes, the levatores palpebrarum, the recti and obliqui, producing partial ptosis and nearly complete immobility of the eyeballs, with complete preservation of the functions of the internal ocular muscle, iris, and ciliary muscles. Accommodation was normal, reaction of iris to light and accommodative movements also normal. There was no perceptible lesion of the fundus. Vision normal in one case and defective from irregular astigmatism in the other. There was no evidence of disease in any other cranial nerve or in any part of the body, no headache, and no suspicion of syphilis. Both patients were males, aged respectively seventeen and twenty-nine years. Slower improvement occurred in one case, under large doses of iodide of potassium and faradization of the eyes, than in the other. Both cases were still under treatment.

Dr. Birdsall held that the lesion could not be due to intra-orbital disease, nor to an intracranial lesion involving primarily the trunks of the nerves implicated, on account of the escape of those branches of the third nerve which supply the iris and ciliary muscles; that it must, therefore, be an affection of the nuclei of origin of the sixth, fourth, and parts of the third nerves which supply the external ocular muscles, these parts representing an associated system concerned in the movements of the eyeballs and in lifting the upper lid, somewhat distinct from the iris and ciliary muscles, which are more intimately connected with the functions of the optic nerve in the regulation of light, and are probably supplied, as far as the sphincter iridis and the ciliary muscles are concerned, from nuclei in close proximity to, but distinct from, the nucleus of

origin of the remaining third-nerve fibres which supply the external ocular muscles. A gross lesion or a focal softening, as a neoplasm, meningitis, arteritis, could hardly affect nuclei so widely separated as are the third, fourth, and sixth, and not at the same time affect the ciliary and pupillary centres and other neural tracts. Degeneration within this system of associated muscles, nerve-tracts, and centres, similar to the degeneration of progressive muscular atrophy and of labio-glosso-pharyngeal paralysis, appeared to be the most consistent theory of the pathology of the cases.

Dr. Birdsall stated that Hutchinson, in 1869, had advanced this view (based on an atrophy in which the lesion was found by Dr. Gowers) to account for this class of cases, which Von Graefe first called attention to. In most of Hutchinson's cases, however, the iris and ciliary muscles were affected, and either the condition or indications of disease in other parts of the nervous system were present in all of his seventeen cases. Reference was made to the allied cases reported by other authors, and to certain relations between tabes dorsalis and progressive muscular atrophy, and also to syphilitic ocular affections.

A STUDY OF THE ETIOLOGY OF TABES DORSALIS, WITH SPECIAL REFERENCE TO THE EFFICIENCY OF SYPHILIS.

Dr. E. C. SEGUIN, not being present, had requested Dr. BIRDSALL to present the statistics, which he had prepared from notes in private practice. There were seventy-two cases. Of these, twenty-two, or 30 per cent., gave a history of chancre. Of chancre and secondary symptoms there were sixteen, or 22.2 per cent. Of those giving no chancre or secondary symptoms there were fourteen, or 19.4 per cent. In twenty, or 28 per cent., there was no mention with regard to syphilis. Thus there was 52.2 per cent. with a history of syphilis, and 48 per cent. in which syphilis was not mentioned.

Dr. BIRDSALL said that at the last meeting of the Association he himself gave statistics of about forty-two cases, of which only 9.5 per cent. gave a syphilitic history.

Dr. AMIDON presented statistics left by Dr. Webber, of Boston, and Drs. Spitzka, Rockwell, Putnam, Webber, and Dana participated in the discussion. Dr. DANA said that he was quite sure that among syphilitic sailors not more than one in a thousand had tabes.

Dr. C. L. DANA, of New York, then read a paper on

MYSOPHOBIA AND FOLIE DU DOUTE.

Two cases, one of either affection, of a marked kind, were related. The question was raised whether mysophobia should be classed with *folie du doute*, and what significance should be given to morbid fears, and where they should be placed. The condition

of *folie du doute* was usually classed among the monomanias. In most cases the disease could not be considered an insanity unless this term were used in a very wide sense. Dr. Dana said he had at first been inclined to think that the two classes of cases, mysophobia and *folie du doute*, could not be related, but he had changed his mind. It now seemed they were both a kind of aborted monomania, so to speak, conditions showing a morbid state of the brain in one direction. As to the interpretation which should be put upon morbid fears, he thought they were all to be regarded as simply psychopathic symptoms, which were sometimes found in insanity, hypochondriasis, etc.

Dr. SPITZKA had seen as many as eighteen cases within fourteen months, and he had been struck by the fact that heredity played a very small rôle in the etiology; masturbation among men was the great cause. The results of treatment, medicinal and moral, had been quite gratifying.

Dr. LEONARD WEBER could not see why mysophobia should be raised to the dignity of a subdivision of *folie du doute*. As to the cause, there was usually a history of exhaustion from masturbation or sexual intercourse in the male, and uterine disease in the female. He regarded mysophobia as simply one of the symptoms of hypochondria in the male and of hysteria in the female.

Dr. DANA said he did not think, if Dr. Weber should see a marked case of mysophobia, that he would confound it with hypochondriasis or hysteria. He did not understand that any author made a separate disease of the affection, but that it was a name for a psychopathic symptom, indicating that the person had a particular form of monomania or insanity. He had derived very little benefit from other than moral treatment.

Dr. MASSEY read a paper on

THE MODIFYING EFFECT OF ANÆSTHESIA ON GALVANIC REACTION OF SPECIAL SENSES.

The case related was one of partial anæsthesia of the fifth nerve. The patient was healthy, aged 48, who became blind in both eyes,—in the one a year sooner than in the other. There was no assignable cause. Over the left eye there was a partial anæsthetic spot. A needle might be thrust through the skin without pain, but it was felt by the patient. To the faradic current sensation was normal, and to the galvanic current the local effect on the skin was normal, but the sensation of tingling was two-thirds lessened. Gustation also two-thirds lessened. Vertigo was readily produced when the poles were placed anywhere but over the anæsthetic area. In this area thirty-five cells were required, while but twelve would suffice at the opposite side of the forehead. No vision could be induced. Treatment was by interrupted current to the eye and numb spot, and increasing doses of

sulphate of strychnine. There was an apparent result of decided increase in sensation at the numb spot. With increasing sensation there was decrease of number of cells required to produce dizziness and taste. This was a corroboration of facts observed by Althaus.

Dr. ROCKWELL said it was an interesting fact that when taste and smell were lost the galvanic current would fail to give the slightest sensation of metallic taste, and it was only as the patient recovered this sensibility that perception of metallic taste returned.

Dr. G. W. JACOBY presented a paper on

CEREBRO-SPINAL SATURNISM.

He related a case of marked saturnine ataxia which recovered under iodide of potassium. He had been able to find reference to only three such cases.

Dr. AMIDON thought there should be no more doubt about the possibility of lead producing ataxia than arsenic and mercury.

Dr. BIRDSALL had observed marked tremor in lead-poisoning, but never absolute paralysis.

Dr. DANA said that cases of lead-poisoning were quite common, and it was quite certain few had observed such effects as those mentioned by Dr. Jacoby.

The Association adjourned, to meet at the call of the Council in 1885.

NEW YORK ACADEMY OF MEDICINE.

A STATED meeting was held June 5, 1884. FORDYCE BARKER, M.D., LL.D., President, in the chair.

THE DEATH OF A SENIOR EX-PRESIDENT OF THE ACADEMY, DR. WILLARD PARKER, AND OF AN HONORARY FELLOW, DR. S. D. GROSS. —ANNOUNCEMENT AND REMARKS BY THE PRESIDENT.

Dr. BARKER said that, in connection with the death of two of our most eminent and distinguished Fellows, he had learned certain facts with regard to the history of the Academy which struck him as interesting and curious. The Academy was founded thirty years ago, there being one hundred and eighteen original Fellows. One hundred of this number are now dead. Seven died between the ages of eighty and ninety, the average being eighty-three; eighteen died between the ages of seventy and eighty, the average being above seventy; forty-seven died between the ages of fifty-five and seventy, the average mean being sixty-four and a half. Of eight ex-Presidents who were original Fellows, the average age at the time of their death was seventy-eight and a half. Only two of this class died under seventy. Our present senior ex-President, Dr. James Anderson, has already passed his eighty-sixth birthday, and is still erect and mentally active, and

nearly all the others now living were, he believed, in vigorous health. He expressed the prayer of all that they might continue long with us. He thought it had been demonstrated that, notwithstanding the hard, laborious life of the medical man, his irregular hours for food and sleep, and his burden of anxiety and responsibility for the happiness and lives of others, his longevity compared most favorably with that of men in other professions. Might we not ask if the influence of the Academy had not been a factor in bringing about this result by stimulating men to an active, useful, and honorable life, suppressing envy and hatred, and encouraging cheerfulness and good will? The President here expressed sympathy for Dr. Samuel T. Hubbard in the death of a promising son from disease contracted while in the performance of his duties in the Bellevue Hospital.

Within a few weeks the profession had lost two of its best and most distinguished men in this country, both of whom belonged to the Academy. He would not now repeat any of those biographical details which had been so generally published, but would only refer to their connection with us, and to the personal qualities which seemed to explain their great success and eminence in their professional lives.

Dr. WILLARD PARKER was elected President of the Academy in 1856. At the time of his death he was within a few months of the eighty-fourth year of his age. For many years he was the most prominent and conspicuous medical man in this city, not only as a surgeon, but also as a general practitioner. With the exception of Benjamin Rush, he did not believe that any physician in this country ever commanded so powerful an influence over the community where he resided, both professional and public, as Dr. Parker did for many years in this city. His commanding and attractive person, his genial and frank manner, his uniform cheerfulness, his practical common sense, his ease and fluency in conversation,—all combined to produce a magnetic influence on those about him. The most prominent characteristics of his professional mind were quick perception, a kind of insight which gave him an intuitive power as to the essential and practical features of disease, enabling him to distinguish the incidental or what was merely coincident and secondary. In the treatment of his cases, while he did not know that he ranked as a great therapist, he still must regard him as exceptionally successful. He always made his patients feel that they were better. He never knew a physician who more thoroughly understood the influence of the *moral* on the *physique*, or who more constantly utilized this knowledge in his practice. All his patients had the benefit of the stimulating and tonic effect of his cheerfulness and good will. His general and

hygienic directions to his patients must have been of unusual excellence. Some years ago, he gave a course of public lectures, both in New York and Brooklyn, which he called "The House we Live In," which Dr. Barker regarded as the most sensible and useful course of popular lectures on health which had appeared since the most famous work of Andrew Combe. As to his rank hereafter as a great surgeon, Dr. Barker did not consider himself able to judge; his life had been too busy to allow of his contributing so much as some others to medical writings, but many valuable articles from his pen appeared in current medical literature. Dr. Parker had kept up to the last the warmest interest in the Academy of Medicine.

PROF. SAMUEL D. GROSS, who died within the past month, in the seventy-ninth year of his age, was elected a corresponding Fellow of the Academy in 1851, and an honorary Fellow in 1876. No man of the present age (and he asserted this without any qualification) had made such a reputation as a great surgical teacher and writer as Dr. Gross; and no one of the profession of this country had ever received such honors from universities and learned societies in Europe; and in this country the profession had bestowed upon him the highest honor in their gift. With regard to him the voice of envy was never heard, and no one had ever whispered that all these honors were not earned honestly or were not well merited. Underlying all this, he had for some years noticed the rare and curious fact that even those who had had no personal acquaintance with Dr. Gross seemed always to speak of him with personal regard and affection: This, probably, was due in large measure to the honesty, integrity, and sincerity of purpose which stamped the man and was conspicuous and transparent in all of his writings. His industry and ability were marvellous, and the amount of work which he accomplished was monumental. He did not believe that in medical history there could be found any instance of a man seventy-nine years of age writing such a paper as the one read at the last meeting of the American Medical Association on "Laceration of the Sexual Organs consequent on Parturition." The most distinguished gynecologist of the present day might well feel proud to have written it.

To each of the two men—Willard Parker and S. D. Gross—might be applied, with much greater truth than usual, the very trite quotation, "He was a man, take him for all in all, I shall not look upon his like again." Their name and their fame were a part of our common inheritance. There is no greater inducement to stimulate those who are going out than the character and success of the great ones who preceded; and therefore it is our privilege, as well as our duty, to cherish sacredly their memory.

"Lives of great men all remind us
We can make our lives sublime,
And, departing, leave behind us
Footprints on the sands of time."

A PLEA FOR MORE HEROIC INTERFERENCE
IN SURGICAL AFFECTIONS OF THE BRAIN.

Dr. R. W. AMIDON read a paper with this title, in which he supported his plea by a review of statistics given by Walsham and others, and a collection of cases which he had made in which trephining or similar operations had been performed since 1879. Walsham gave over six hundred cases in which the trephine had been used, and of this number over four hundred patients died. Walsham's analysis of the cases, however, showed that only ten and six-tenths per cent. of the deaths could be assigned to the operation itself, and Dr. Amidon thought that this was even too great an estimate of this cause of mortality in the list. The cases which he had collected, occurring since 1879, amounted to one hundred, and were not selected. He thought that from these data we could arrive at pretty conclusive evidence as to the mortality of the operation *per se*, as looked at in the light of modern surgery. Of the hundred cases, twenty-six died, and, of the twenty-six, twenty-three presented at the time of the operation symptoms endangering life, thus leaving only three cases in which the fatal issue could even be remotely traced to the operation. This certainly should rob the operation of its terrors. He related three cases which went to show how extensive injury of the cranial bones might take place and the patient still recover.

It would seem, from statistics quoted, that opening of the dura mater had led to a fatal issue in plus thirty-nine per cent. of the cases; but, if it were remembered that in these cases there was usually laceration of the brain, hemorrhage, or the introduction of a foreign body for exploratory purposes, it would readily be seen that the cause of death could not be traced to opening the dura mater during the operation in all of these cases. On the contrary, it had been shown that this procedure had not been the direct cause of death in more than seven and six-tenths per cent.

The author then considered how much foundation there was for the sacredness in which the cerebrum was usually held, and related several modern cases in which extensive injury of the brain had taken place and yet recovery followed. He briefly referred to the case of Dr. Fluhrer, not yet published, in which a young man shot himself in the forehead, the ball passing back to near the lambdoidal suture. The wound was probed; a counter-opening was made on the posterior portion of the skull, at the supposed exit of the ball through the brain; the ball was found, removed, a drainage-tube introduced, passing from the anterior to the posterior opening in the skull, and the patient recovered, with

a return of all his mental powers. "We must conclude," said the writer, "that the brain shows a remarkable tolerance of injury and remarkable reparative power."

Dr. AMIDON then gave a brief review of the subject of cranial and cerebral topography, by which alone cerebral surgery could accomplish brilliant results. He said that neurologists were perfectly sure that there were certain regions of the brain which, when irritated, compressed, or destroyed, gave rise to perfectly unmistakable symptoms.

He recapitulated by saying that we have in trephining an operation which proves fatal in only three per cent. of published cases; the operation of opening the dura mater fatal in only seven and six-tenths per cent. We have in the brain an organ tolerant of injury, ready to take on reparative process; and we possess knowledge enabling us to tell when certain points of the brain are diseased, and also anatomical data enabling us to pierce the cranium and reach such diseased parts.

As to the operation itself, the substitution of the dental engine, with burr or drill, for the ordinary trephine struck him as advantageous. The dental engine enabled us to remove only as much of the cranial bones as was desired, and of any form desired, and it was specially useful in removing the edge of overriding bone and allowing of the elevation of depressed fragments. The operation should always be done with precautions. We should try to secure only proximate coaptation of the flaps. Provide for the freest possible drainage. Use cold antiseptic dressings without much compression. He said without much compression, because in one of the cases reported compression produced serious symptoms, which, however, were only temporary. We should enjoin quiet in a posture to facilitate drainage. There should be simple diet and a slightly loose condition of the bowels. Should there be a rise of arterial tension and temperature, give jaborandi or aconite to the production of their physiological effect. Quinine and alcohol, if used, should be given only in tonic doses. An anodyne was often indicated, and it was his advice never to use opium or any of its preparations. To ease pain and quiet delirium, or to induce sleep, use hydrate of chloral in small and frequently-repeated doses,—ten to fifteen grains every fifteen to twenty minutes until its effect is produced. Quinine and alcohol in large doses and opium in any doses aggravate intracranial inflammation when present, and he thought they might excite it. These suggestions applied equally well or with still greater force in cases in which the dura matter or brain was accidentally or intentionally invaded.

He would advise the operation of trephining in every case of injury of the external vault, provided there were marked cerebral

symptoms; in every case of compound fracture of the skull, whether there were visible depression or not, or cerebral symptoms or not; in cases in which, after the lapse of months or even of years, unmistakable cerebral symptoms follow injury of the head. In addition to the bone, the dura mater should be opened in all cases in which exploration with the hypodermic needle discloses products of purulent inflammation or a great deal of liquid blood underneath the dura; in all cases in which serious superficial lesion of the brain is suspected, but cannot be otherwise proved. In addition to the bone and dura mater, the brain should be explored delicately with a probe in all penetrating wounds of its substance,—punctured, lacerated, or gunshot. Its mass should be invaded, even when superficially intact, by a fine, blunt exploring-needle when the presence of a foreign body or of a hidden collection of pus is suspected, and extraction or evacuation should be made with delicate instruments. Theoretically, he thought that, in a case of neoplasm of the brain which had resisted medical treatment and continued to grow, threatening life, it should be excised, for the reason that such growths were usually single, were surrounded by an inflammatory zone of demarcation, and always killed by pressure.

Dr. GARRISH opened the discussion, and was glad to hear this plea for the trephine. His first case occurred many years ago, in a man who had had epileptic fits during five years, dating from the receipt of an injury on the head. All kinds of medicinal treatment had failed at the hands of various physicians. Recognizing a depression at the seat of the old injury, he trephined, raised a depressed portion of bone, and the patient never afterwards had a fit. He had since performed the operation in as many as four cases, with like result in every instance. In one case, that of a wounded soldier at the battle of Antietam, lying unconscious for three days, the trephine brought him to life, and he entirely recovered.

Dr. ROBERTS described an electrical trephine, to take the place of the dental engine and drill.

Dr. NOYES described one case in addition to that quoted by the author, that of a boy who suffered from a sinus of the frontal bone and other sinuses near the orbit, which discharged more or less matter. This was about 1867. The boy was stupid, and had had convulsions. Dr. Noyes evacuated about three drachms of pus, and the patient entirely recovered after the operation. He still thought it a question whether it were not justifiable to give quinine and alcohol in these cases, when the temperature and pulse indicated probable heart-failure. This he said, notwithstanding Dr. Amidon's opinion that it was probable quinine had caused a basilar meningitis in

the case in which Dr. Noyes had removed the breech-pin of a gun from the brain of a lad.

Dr. PUTZEL had seen cases at post-mortem at Bellevue Hospital in which the condition of the brain pointed to a possible chance of relief had the trephine been employed. The patients had died without a resort to this measure even after all other means had been given up as hopeless. He thought the statistics upon which the author had founded his plea were not altogether reliable, for the reason that the bad cases would probably not be found on record, while favorable ones usually were published. He thought Dr. Noyes had touched the key-note of the whole question when he spoke of cerebral topography. He must differ from the author as to our knowing very much positively with regard to cerebral localization. There was no doubt that we had located the psycho-motor centres, and we knew from cerebral topography where they were situated, but we might not be able to tell from the symptoms what parts were affected. We might have symptoms indicating a surface lesion, while an operation or an autopsy might reveal the fact that those symptoms had been produced by an internal abscess cutting across some of the motor fibres before they reached the cortical substance. He thought that if the patient were in danger of dying of heart-failure we were justified in administering alcohol and quinine. He thought it would not be safe to give hydrate of chloral in the manner indicated by Dr. Amidon, as we might get its accumulated effects.

Dr. AMIDON closed the discussion. With regard to the danger of quinine, he had given it in a case of galloping consumption in large doses, and it had apparently produced a basilar meningitis.

Dr. CASTLE presented resolutions regarding the extension of the park-area of the city, especially in the annexed district, which were adopted.

The Society then adjourned, to meet the first Thursday in October.

MEDICAL SOCIETY OF NEW JERSEY.

THE One Hundred and Eighteenth Annual Meeting of the New Jersey Medical Society was held at Cape May, at the Stockton Hotel. Dr. Stephen Wickes, of Orange, President of the Society, occupied the chair. The meeting was largely attended, and a large number of visitors were present from Philadelphia, who were elected honorary members. The session was opened by prayer by Rev. G. F. Bishop, followed by brief addresses of welcome delivered by Dr. James Mecray and by Hon. F. G. Melvin, mayor of Cape May.

Among the subjects broached by Dr. Mecray was the improved sewerage system which

had been introduced, which had materially improved the hygiene of Cape May, as shown by the health-returns, this county now having the smallest death-rate of any county in the State. He said that not less than ten thousand dollars had been spent upon the hotel in which this meeting was held; and many other hotels had spent large sums in improving the drainage and water-supply. He also spoke of the great fire which had occurred since the last meeting at this place, and which had required the rebuilding of a large portion of the city, which now has a model fire-department.

The Secretary read the minutes of the previous annual meeting, which were adopted.

Dr. Godfrey, of Camden, read a list of visiting physicians, who were, on motion, made corresponding members.

Dr. H. Genet Taylor, chairman of the Committee of Arrangements, presented the programme of the exercises for the approval of the Society, which was adopted.

Reports from delegates to other State Societies being called for, Dr. Ingersoll, delegate to the Maryland Society, Dr. English, to the Connecticut Society, Dr. Benjamin, to the Pennsylvania Society, and Dr. Hunt, to the Massachusetts Society, presented reports.

The Treasurer's report was received, audited, and approved, showing a balance on hand of \$1644.32, of which \$1550 is invested in United States bonds.

The Committee on Judicial Business made the following report on medical education:

"Resolved, That this Society approves and adopts the recommendations of the special committee on the curriculum of the preparation to be required of persons contemplating the study of medicine in this State, as contained in the report presented at the last meeting of this Society. That, to carry out the recommendations of said report in regard to a censorship as therein contemplated, this Society is of the opinion that two boards of censors should be appointed, consisting each of five members of this Society, one for the northern and one for the southern part of the State, to whom should be presented for approval the credentials of all persons proposing the study of medicine, and, in case of the insufficiency of such credentials, to examine the applicant in the branches of science and learning indicated in the report of the committee. That the Standing Committee prepare and report to the Society for its adoption such amendments to its by-laws as are necessary to carry out the plan and recommendations of the committee. That the Corresponding Secretary communicate the action of the Society on this subject to the district medical societies in this State, with instructions to adopt such regulations as shall effectually secure the observance of the measures adopted by this Society in their several localities. That the Corresponding Secretary

communicate the action of this Society on the subject to the State medical societies of the several commonwealths of the Union, and respectfully request their co-operation with us in the effort to elevate the standard of medical education throughout the country."

A motion to adopt these resolutions led to considerable debate. On motion, further consideration was postponed until the morning session. The Secretary read the report of Committee on Nominations.

In the evening, after the report of the Corresponding Secretary had been concluded, a committee on preliminary medical education reported that the action of the Society at its last meeting had been communicated to the American Medical Association, as directed.

The President, Dr. Stephen Wickes, then read his address on "Living and Dying: their Physics and Psychics," which was a meditation on death, its signs and evidences.

In conclusion he said,—

"Divinity, law, and medicine are distinguished from all others as the learned professions. Those who enter them are not attracted by the promise they give for the accumulation of wealth, nor do they foster an ambition to reach high civil distinction. A few in the ranks of each may secure both; but such prizes are not in the line of an earnest devotion to the higher purposes of any one of them. They are each a resultant of the higher needs of the race. If man had not fallen from the estate in which he was created, none would have been called to proclaim redemption; none to study and digest and regulate the laws of right and justice in the world, were the thoughts and purposes and actions of mankind always conformed to a spontaneous and invariable acceptance of them; and so the perfection and harmonious workings of our physical and psychical nature would have forever saved the human race from the pains and sufferings of disease and mortality of the body. The discussion of our subject cannot fail to impress us with the important and grave responsibilities assumed by the physician when he gives himself to his chosen life-work. Lord Bacon says, 'Every man is a debtor to his profession:' in the learned professions this is emphatically true, for their conscientious pursuit involves the fact that a debt is due to our fellow-man. Need I say that a pure personal character, a profound estimate of the claims of humanity, and a lively sympathy with the sufferings of the sick, and the most assiduous efforts to avert the dreaded event of death,—more dreadful oftentimes to the living than to the departing,—should distinguish a practitioner of the healing art? Our calling is not a mercenary one. The man who enters it with no higher conception of it than a business fails to appreciate its claims upon him. Says a recent writer, 'The physician who makes gold the chief end of his profes-

sion disgraces it.' We may add here that the community soon finds him out and estimates him accordingly. It is a calling which invites to mental application and to scholarly attainment. Nature reveals her secrets only to those who by study search for them in the wider fields of literature and sciences cognate to medicine. The subjection of her treasures to his own use will alone secure the broadened intellect and the higher impulses of the learned physician. When, besides all this, he cherishes a devout and abiding purpose to meet the claims of the God of nature upon his reverent personal service, he meets the claims of his profession, does good in his day, and ends life loved and respected. When such a life is finished, its memory is blessed.

"We have seen a noble, far-spreading tree against the cold, auroral-tinted sky of a winter's sunset, its beauteous summer foliage withered and gone, its fruits all garnered, its graceful and harmonious outlines telling of its spring bloom, its summer beauty, and its autumnal fruitage; it foretells as well its richer products in the future. So is a finished life: its fruitage is over, but its fragrant memories recall its outlines, full of grace and beauty, as they foretell the rewards in store for one who has served well his God and his fellow-man."

The final day's session was opened with the discussion of the resolutions of the Committee on Judicial Business with regard to the requirements for practising medicine. On motion of Dr. Hunt, the resolutions were considered *seriatim*. The first resolution was adopted; the second was amended by the insertion of a clause requiring the establishment of a Standing Committee, to be appointed each year, and the resolution was then adopted; the next two were also adopted; but the fifth was amended by substituting "State" for "Commonwealth." The resolutions were then adopted as a whole.

Dr. I. J. SMITH, of the Standing Committee, read the report on "Public Health," and Dr. GARRISON read the report on "Medical Jurisprudence." In accordance with the spirit of the last communication, Dr. Hunt offered the following, which was approved:

"Resolved, That the Society recognizes the importance of some legislation as to the best methods of securing expert witnesses."

It was further ordered that the subject be referred back to the original committee, and that they, in co-operation with the Standing Committee of the Society, make such changes as they deem best, present the bill to the Legislature, and urge its acceptance.

Dr. WATSON presented a report on the "Army Medical Museum and Library of the Surgeon-General's Office," in which the urgent need for more suitable accommodations in a fire-proof building was insisted upon.

Dr. PARRISH read an able and interesting report on "Lunacy," in which the condition

of the insane in the various State institutions was considered. He stated that the facilities for the study of nervous diseases in the majority of these State institutions were poor and inadequate.

Dr. C. J. KIPP read an essay on the "Prevention and Treatment of Purulent Conjunctivitis." He considers the origin of the disease in children to be by inoculation, and he insists upon the contagious character of the discharges. His treatment is as follows:

Scrupulous cleanliness, the application of cold to the lids in the early stage, and the application of the nitrate of silver to the conjunctiva when the discharge becomes creamy. During the first few days of the disease, while the lids are hot and shining, the conjunctiva is tense and smooth, and the secretion consists of straw-colored serum, he has found it best to do little more than to apply cold compresses to the lids, and to clear the eyes at short intervals. He prefers absorbent cotton to sponge for wiping away the discharges and for the purpose of removing the secretion from the conjunctival sac. He drops water from an eye-dropper between the slightly-opened lids. The eyes should be opened and cleaned at least every hour. Compresses are applied continuously in the intervals. A reliable attendant is of great service.

When there is a very profuse discharge from the eyes, and the conjunctivæ are a good deal swollen, he uses at first a one-per-cent. solution of nitrate of silver, if necessary a two-per-cent. solution, the indication being a copious purulent discharge and swelling and succulence of the conjunctiva. To apply this caustic solution it was recommended to place the child upon the lap of the nurse, so that the child's head can be held face upward between the knees of the physician. Corneal complications require special care in their treatment, a mydriatic is often needed, and in addition leeches to the temples, and application of a cold dressing with a light bandage.

Dr. T. G. WELCH next read an essay on "Many Drugs: Few Remedies,"* which was a vigorous protest against dogmatism and specific medication, and especially condemned the application to the human subject of the results of experiments upon the lower animals with various toxic agents. He believed that the profession is in danger of falling into a form of charlatanism in following the recommendations of new remedies by interested dealers, and said that if a few drugs, like opium, quinine, iodine, phosphorus, the iron salts, strychnia, aconite, and anæsthetics, were rescued, and the bulk of the rest sunk in the sea, the death-rate would not necessarily be increased thereby. In conclusion, he complained of a want of a uniform system of recording the results of experience, and recommended, as a means of supplying this,

* Appeared in full in the Medical Record, p. 661.

a College of Experimental Medicine, as recommended by Milton, with a comparative system of registration for correcting errors of observation.

The following officers were then elected: *President*, P. C. Barker, M.D., Morristown; *First Vice-President*, Joseph Parrish, M.D., Burlington; *Second Vice-President*, C. J. Kipp, M.D., Newark; *Third Vice-President*, J. W. Ward, M.D., Trenton; *Corresponding Secretary*, William Elmer, Jr., M.D., Trenton; *Recording Secretary*, William Pierson, Jr., Orange; *Treasurer*, W. W. L. Phillips, Trenton; *Essayist*, Dr. H. H. James.

Adjourned to meet at Long Branch on the second Tuesday in June, 1885.

PHILADELPHIA CLINICAL SOCIETY.

A STATED meeting of the Society was held May 23, 1884, the President, Dr. HENRY BEATES, JR., in the chair.

Dr. MARY WILLETS reported a "Puerperal Case with Numerous Complications." Mrs. H., æt. 30, primipara, after a normal delivery did well for twelve days, then, after pain in her back and limbs, and chilly sensations, had a rise of temperature, and was attacked with nausea and vomiting. The temperature continued high for two weeks. There was nothing to account for the supra-normal temperature, except a laceration of the cervix uteri, and some tenderness around this point.

On the twenty-fifth day after delivery the patient complained of pain in her left leg. For more than a week there was pain and swelling both above and below the knee. The pain greatly increased on pressure and attempt at extension of the limb, and was in the course of the femoral vein; but careful examination failed to discover anything abnormal. On the forty-third day, the patient having recovered sufficiently to go downstairs, we were suddenly confronted with well-developed mania, at first violent, but subsequently becoming merely loquacious. This, continuing two days, gave place to somnolence, and, five days later, to convalescence.

Dr. E. E. MONTGOMERY remarked that the case was unusual from the lateness at which the fever appeared. During his present term at the Philadelphia Hospital measures had been instituted to prevent the contact of septic matter with the parturient parts. A solution of corrosive sublimate, one to two thousand parts, was used to sponge the parts after placental delivery, and cloths saturated with the solution were kept in place by absorbent cotton, oil-silk, and a T bandage. There had been but three cases of septicæmia during the present quarter.

Dr. A. H. SMITH said the local examination, which the reader of the paper had very properly made, solved the whole problem. Together with the symptoms it showed the

case to be one of pyæmic—not septicæmic—poisoning, in a woman feeble and unable to resist the absorption of pus. Septicæmia cannot arise after all open surfaces have become purulent. The examination was valuable, and he thought it would be better if more care was generally exercised in this direction.

Dr. PHILIP M. SCHIEDT read a paper on the "Clinical Phenomena following the Puerperal State in Two Cases." In the first case, he was suddenly summoned to the bedside of a woman aged about 35, whom he found comatose, with undilated pupils, head drawn to left side and flexed on the chest, a clammy sweat on forehead, and imperceptible pulse. The heart-sounds were faintly detected, and the body and extremities warm. Restoratives and artificial respiration were without avail, and the patient soon expired.

The history of the case, subsequently ascertained from the family physician, was as follows. She had been delivered of a child, after a natural labor, two weeks previously, which was followed by a normal convalescence, unaccompanied by fever or offensiveness of the lochial discharge. Her babe was healthy, was regularly nursed by her, and she was doing so well that her physician had ceased his visits. On the morning of her death she felt unusually well, but about nine o'clock complained of some headache, vomited a little mucus, had a heavy chill, became unconscious, and was found by him in the condition described, which soon terminated in death.

The notes were presented to the Society for the purpose of obtaining the opinions of its members as to the cause of death,—the writer expressing a belief in its cardiac origin.

The other case was one of temporary blindness following labor. After a perfectly natural labor, three hours in duration, the mother failed to see her child when presented by the nurse. It was found that she was perfectly blind, and unresponsive to the candle-test. She remained fully conscious and in possession of other senses. This continued three days, and was followed by gradual and complete recovery. During this time there was nothing otherwise abnormal in her condition. There was no œdema, therefore no examination of the urine was made. Previous to confinement she had been well able to attend to her duties.

Dr. L. BREWER HALL, in discussing the second case, said the most plausible explanation of such rapidly disappearing blindness was œdema, giving rise to choked disk. The cases reported have not been properly examined by an ophthalmologist,—an omission frequently inexcusable. Some cases do not get well, and then we find an atrophy of the optic nerve. He had seen quite a large number of hysterical cases, at times monocular, and such cases are easily diagnosed by feints and attempts to discover that they do

see while off their guard. Some one should always be called in in these cases to make an ophthalmoscopic examination.

Dr. ALBERT H. SMITH acknowledged the want of exact information, while the uræmic action of such cases had been assumed.

Dr. G. BETTON MASSEY denied the necessity of assuming that cases of hysterical blindness were mere malingerers. Such patients at times may be perfectly honest in their inability to see,—the real condition being one of divorce between the volitional and intellectual powers of the mind.

Dr. E. E. MONTGOMERY read a paper on "Tracheotomy in Croup and Diphtheria," based on an experience of twelve cases, one of which, a case of diphtheria, had recovered and was exhibited to the Society. Five of the operations were for diphtheria, the remainder for croup. In all, the operation was one of last resort, and the series teach the importance of early operation. Death occurred most frequently between the third and fourth days; one died in fifteen hours, a second in thirty-six hours, and another on the ninth day. In the successful case, the canula, owing to laryngeal spasm, remained until the twenty-fourth day.

In operating, he gives chloroform, and avoids hemorrhage by transfixing a fold of skin, held by himself and assistant, making an incision 1" long, completing the dissection to the trachea by the forceps and grooved director. After opening the trachea, care is observed to remove all membrane previous to insertion of canula. After-treatment consists in attention to tube, keeping several thicknesses of tarlatan wet with hot carbolized water over it. The temperature of the room is maintained at between 75° and 80° F., and stimulants and good food given, together with quinia, tincture ferric chloride, and corrosive sublimate,—the latter in frequently-repeated doses. The attempt is made to dispense with the tube from the fifth to the eighth day, but it should not be removed until respiration *per vias naturales* is fully established. From these cases he draws the following conclusions: 1, that tracheotomy is justifiable in diphtheria as well as croup; 2, that it should be performed in croup when it is evident that drugs do not control the progress of the disease, particularly when there is depression of the lower end of the sternum during inspiration; in diphtheria, with the advent of suffocative symptoms; 3, that in the performance of the operation, the knife should only be used to incise the skin and trachea, the intervening tissue being torn by director and forceps; 4, that the subsequent use of proper drugs will promote a favorable result.

Dr. COLLINS recalled several flattering cases which in a few days showed crape on the door. He doubted the propriety of anæsthesia, but thought the operation justifiable if only as a means of easing death.

Dr. WILLIAM H. PARISH said this operation, which was one of the easiest in performance, should be resorted to whenever the symptoms were of such a character as to show impending suffocation. To determine this required no little judgment, and he recalled a case of recovery without operation, where both himself and Dr. Allis had agreed it should be performed. He treats diphtheria by large doses of chlorate of potassium and iron.

Dr. W. H. WARDER, in discussing the treatment of diphtheria, thought the chlorate of potassium and tincture of the ferric chloride most successful in ordinary cases. In more malignant ones he had resorted to calomel in five-grain doses. In a case which Dr. Pepper had seen with him, the latter advised a continuance of this plan for forty-eight hours. At the end of this time forty grains had been taken; a large and offensive evacuation followed, and the child recovered. He did not think such large doses usually necessary, however. Much of the calomel passed without other change than oxidation.

G. BETTON MASSEY, M.D.,
Recording Secretary.

REVIEWS AND BOOK NOTICES.

A TEXT-BOOK OF THE PRINCIPLES OF PHYSICS. By ALFRED DANIELL, M.A., Lecturer on Physics in the School of Medicine, Edinburgh. London, Macmillan & Co., 1884. 8vo, pp. 653. Cloth, \$5.

This work is designed primarily as a contribution to medical education, for, as the author very truly states, an arrangement under which a student of medicine may even proceed to the degree of M.D. without any adequate knowledge of physics is self-evidently opposed to common sense and the exigencies of physiological study and of medical practice. We endorse his statement that a knowledge of natural philosophy is an essential part of the mental equipment of the medical student and of the properly-trained medical man.

The fact that the present work has been prepared by an author acquainted with the needs of the intelligent student of physiology, and qualified by his attainments and position to address the medical reader, gives this textbook special value to the profession. The progress of the work is from the simple to the complex. No preliminary knowledge of physical principles is assumed, and every effort has been made to attain to absolute lucidity of expression. But it must not be inferred that it is simply an elementary work in the ordinary sense. It discusses in a masterly manner the principles of physics; its style is succinct but clear, its statements carefully and correctly made, its definitions concise. The term "conservation of force" is discarded, and pronounced incorrect: conservation of

energy is now considered to be more in accordance with scientific fact. Electricity and magnetism are declared to be not forms of energy, neither are they forms of matter, but they are provisionally defined as "conditions of matter." It seems to us that this is an ultra-refinement, unless motion, heat, and light are also regarded as conditions of matter; but, in truth, it is elsewhere stated in the work that "Energy may appear as motion, as heat, as light, as sound, and again as that of electrical or magnetic condition." The propriety of using the term electricity may be questioned, but, if employed at all, it evidently bears the same relation to the source of kinetic manifestations as the other forms mentioned.

We like this book very much, and unhesitatingly recommend it to those who wish a good work of reference upon the subject in which all are interested.

THE CINCHONA BARKS PHARMACOGNOSTICALLY CONSIDERED. By FRIEDRICH A. FLÜCKIGER, Ph.D., Professor in the University of Strasburg, Germany, etc. Translated from the Original Text, with some Additional Notes, by FREDERICK B. POWER, Ph.D., Professor of Pharmacy and Materia Medica in the University of Wisconsin. With Eight Lithographic Plates and One Wood-cut. Philadelphia, P. Blakiston, Son & Co., 1884. Pp. 101, large 8vo, cloth. On sale by J. B. Lippincott & Co.

This valuable monograph of Flückiger's, which constitutes a section of his "Pharmacognosie," has been carefully translated by Professor Power, and is here published in handsome style, illustrated with eight full-page plates. The recent introduction of cuprea bark into commerce, which, although not a cinchona at all, yet contains sufficient proportion of quinine to give it permanent value, and the well-known fact that many varieties of cinchona do not contain the proper alkaloids at all, taken in connection with the interest shown in the cultivation of quinine-bearing trees, have rendered necessary a better comprehension of the subject of cinchonology, as it has been called.

The present work will therefore be welcomed by American readers, as it embodies much interesting, valuable, and authentic information in its short but systematic consideration of the subject.

GLEANINGS FROM EXCHANGES.

POST-MORTEM REMOVAL OF THE BRAIN FOR EXAMINATION.—Professor Wilder, in his course of lectures on the Cartwright foundation, gives the following as the best method of getting at the brain for purposes of study. He says,—

"The principal features of the methods employed in the anatomical laboratory of Cornell University for the macroscopic study of the normal brain are as follows:

"1. The initial determination, if possible, of the use to be made of a given brain.

"2. The concentration and preservative effort upon the parts especially desired, and, in some cases, a reduction of the mass to the region containing these parts.

"3. The exclusive employment of alcohol as a preservative agent.

"4. The maintenance of a low temperature during all preservative processes.

"5. The injection of alcohol steadily for from one to ten days (continuous alinjection*) into the arteries, so as to harden the brain *in situ*.

"6. The demonstration of the forms of the coelæ (‘ventricles’) and the contour of their parietes by the injection into them of alcohol or of some mass capable of solidifying into a cast.

"7. The systematic and intentional mutilation or even destruction of the skull for the sake of the brain.

"8. The removal of the adult calvaria after the usual circular incision, by hemisection a little laterad of the mesen.

"9. The exposure of the brains of fœtuses and small animals by means of nippers, the trephine, and the dental engine.

"10. The avoidance of all pulling upon the brain, either active or from its own weight, by the observance of care in all manipulation and by the constant support of the organ in brine.

"11. In general, a treatment of the brain in a manner commensurate with its complex structure, its high office, the value of the information to be gained from it, and last, though not least, our own self-respect and consideration for our patients,—for he who is habitually rough with the dead is certainly in danger of occasional disregard of the living."—*New York Medical Journal*.

BORO-GLYCERIDE IN THE TREATMENT OF CONJUNCTIVITIS TRACHOMATOSA.—Dr. Charles S. Turnbull, of Philadelphia, has reported in the *Archives of Ophthalmology* his experience with boro-glyceride in the treatment of forty cases of contagious ophthalmia (conjunctivitis trachomatosa of Arlt) in an orphan asylum. In the early stage he used a teaspoonful of the fifty-per-cent. solution in half a pint of water very freely for a few days, in connection with an ointment (sol. boro-glycerid. 50 per cent., ʒii; gelat. petrolei, ʒii; olei rosæ, q. s.), of which a small portion was applied at night. When the discharge diminished, the trachomatous lids and the eyes were kept

* Since *aldehyde* is generally accepted as a legitimate abbreviation of *alcohol dehydrogenatus*, there seems to be no *a priori* objection to *alinjection*, *alinject*, *alinjected*, etc., as a single word equivalent to *alcohol injection*, etc.

clean as before, and a few drops of the fifty-per-cent. solution dropped into the eye or painted upon the everted lids twice daily. The results were exceedingly successful: the majority of the cases improved in two or three weeks, the average length of treatment being two months. Slight pannus and superficial corneal ulceration occurred in only one case; in a few, dacrocystic blepharorrhoea existed as a complication. The ointment was considered an essential part of the treatment, and should be continued for at least two months after all discharge has ceased. As many of the cases were scrofulous and miasmatic, such success was very creditable.

DIFFUSION OF ARSENIC THROUGH THE BODY WHEN INTRODUCED AFTER DEATH.—Victor C. Vaughan, M.D., and James H. Dawson, Ph.C., have made experiments (abstract from "Contributions from Chemical Laboratory University of Michigan") with the view of determining whether or not arsenious oxide (common white arsenic) would diffuse through the body after it had been mixed with water and injected into the mouth or rectum after death, this having been the most important question which arose in a murder case tried in Michigan within the past year. They concluded, from experiments on dead bodies, that arsenic is widely diffused through the body when introduced after death, and that, therefore, in a case of suspected arsenical poisoning, if arsenic has been introduced into the body after death, the finding of the poison in the various organs is no proof that the arsenic was introduced during life and was the cause of death. Arsenical embalming fluids may, according to the above, be used as a means of covering up crime; and this fact should be borne in mind in cases of supposed poisoning by arsenic.—*Weekly Drug News.*

OFFICIAL LIST

OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U.S. ARMY FROM JUNE 8, 1884, TO JUNE 21, 1884.

THE ARMY MEDICAL EXAMINING BOARD, New York City, is dissolved, to take effect June 14, 1884.

BROWN, JOSEPH B., LIEUTENANT-COLONEL AND SURGEON.—Upon completion of the business of the Army Medical Bureau, directed to comply with S.O. 44, current series, A. G. O., and return to New York City.

CLEMENTS, BENNETT A., MAJOR AND SURGEON.—Directed to await orders in New York City.

KIMBALL, JAMES P., CAPTAIN AND ASSISTANT-SURGEON.—Granted leave of absence for two months and fourteen days, to take effect June 14, 1884, and ordered to relieve, August 28, 1884, Capt. Robert H. White, assistant surgeon, from duty at U.S. Military Academy, West Point, N.Y. Capt. White, on being relieved, ordered to report in person to the commanding general, Department of California, for assignment to duty.

STERNBERG, GEORGE M., MAJOR AND SURGEON.—Relieved from temporary duty in Surgeon-General's Office, and ordered to assume the duties of attending surgeon and examiner of recruits at Baltimore, Md. S. O. 131, A. G. O., June 6, 1884.

FINLEY, J. A., CAPTAIN AND ASSISTANT-SURGEON.—Relieved from duty at Fort Stockton, Texas, and assigned to duty as post surgeon at Fort Concho, Texas. Paragraph 4, S. O. 69, Headquarters Department of Texas, June 2, 1884.

MAGRUDER, D. L., LIEUTENANT-COLONEL AND SURGEON.—Granted leave of absence for one month. Paragraph 7, S. O. 143, A. G. O., June 20, 1884.

HAPPERSETT, J. C. G., MAJOR AND SURGEON.—Granted leave of absence for four months. Paragraph 5, S. O. 141, A. G. O., June 18, 1884.

MIDDLETON, PASSMORE, CAPTAIN AND ASSISTANT-SURGEON.—Leave of absence extended three months, on surgeon's certificate of disability. Paragraph 3, S. O. 134, A. G. O., June 10, 1884.

BARNETT, RICHARDS, CAPTAIN AND ASSISTANT-SURGEON.—Assigned to duty as post surgeon, Mount Vernon Barracks, Ala. Paragraph 2, S. O. 113, Headquarters Department of the East, June 9, 1884.

GARDNER, EDWIN F., CAPTAIN AND ASSISTANT-SURGEON.—Relieved from duty at Fort Walla Walla, Washington Territory, and assigned to duty as post surgeon, Fort Canby, Washington Territory. Paragraph 1, S. O. 75, Headquarters Department of the Columbia, June 3, 1884.

PORTER, J. Y., CAPTAIN AND ASSISTANT-SURGEON.—From Fort Ringgold, Texas, to Fort Brown, Texas, as post surgeon.

MADDOX, T. J. C., FIRST-LIEUTENANT AND ASSISTANT-SURGEON.—From Fort Clark, Texas, to Fort Ringgold, Texas, as post surgeon.

BLACK, C. S., FIRST-LIEUTENANT AND ASSISTANT-SURGEON.—From Fort Concho, Texas, to Fort Clark, Texas. S. O. 73, Headquarters Department of Texas, June 9, 1884.

LIST OF CHANGES OF STATIONS OF NAVAL MEDICAL OFFICERS FROM JUNE 8, 1884, TO JUNE 21, 1884.

P. A. Surgeon A. A. AUSTIN, detached from U.S. steam-ship "St. Louis," ordered to Naval Rendezvous, Philadelphia.

P. A. Surgeon J. M. EDGAR, detached from U.S. steam-ship "Wabash," ordered to U.S. steam-ship "Nantucket."

P. A. Surgeon L. B. BALDWIN, ordered to U.S. steam-ship "Wabash."

Assistant-Surgeon H. W. WHITAKER, detached from Naval Rendezvous, Philadelphia, ordered for examination preliminary to promotion.

Assistant-Surgeon F. A. HESLER, ordered to U.S. steam-ship "Minnesota."

Assistant-Surgeon V. C. B. MEANS, ordered to U.S. steam-ship "Vermont."

Medical Director J. M. BROWNE, to attend the International Health Exhibition at Liverpool, England, and delegate to International Medical Congress at Copenhagen, per steamer of July 2.

Surgeon I. R. TRYON, to same duty with Medical Director Browne, and, on completion of this duty, to report for duty on U.S. steam-ship "Quinnebaug."

Surgeon J. HUGG, detached from "Quinnebaug" on reporting of relief, to return home and report arrival.

Surgeon J. S. KNIGHT, ordered before Retiring Board.

P. A. Surgeon C. G. HERNDON, detached from "Albatross," ordered to attend officers of Navy and Marine Corps in Washington.

Surgeon J. M. FLINT, detached from Smithsonian Institute, ordered to Fish-Commission steamer "Albatross."

Assistant-Surgeon P. LEACH, ordered for examination preliminary to promotion.

P. A. Surgeon J. E. GARDENER, detached from U.S. steam-ship "Lancaster," ordered to U.S. steam-ship "Powhatan."

P. A. Surgeon J. C. BOVD, detached from U.S. steam-ship "Lancaster," ordered to U.S. steam-ship "Powhatan."